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PHLEBITIS OF THE METATARSAL VEIN—THROMBOSIS—DEATH.

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ON June 10th a very well-bred, high-actioned and impetuous chesnut mare, aged, was driven in a drag from Windsor to Ascot and back, and on both journeys was much excited and unsteady. On the previous day she had travelled to Windsor from London, where she had been standing idle for several months, immoderately fed and insufficiently exercised. On the evening of the Ascot journey she exhibited nothing amiss, but the following morning she was lame in the left hind leg. She stood on the toe of the foot, and the heel was with difficulty put to the ground. The fetlock joint was swollen, and this swelling was greatest on the inner side, above the sesamoid bone, where, in the situation of the internal branch of the suspensory ligament, it was hard, and extremely painful on manipulation. The lameness appeared, in fact, to be due to sprain of this portion of the ligament, and the usual treatment was recommended—viz., rest, placing a high-heeled shoe upon the foot, and continuous irrigation of the fetlock with cold water. Unfortunately, as it afterwards proved, at the desire of the owner of the mare, warm fomentations were substituted for the cold water.

On the 12th the lameness was most marked, and the foot was frequently raised from the ground. The leg was more swollen around the fetlock, and the tumefaction had extended towards

the hock, while the pain had greatly increased. A strong purgative dose was administered. On the 13th the leg was still more tumefied, the œdema having nearly reached the hock and it had descended quite to the hoof; it was pretty uniform, though densest and most prominent and sensitive on the inner aspect of the leg, particularly along the course of the metatarsal vein. The pulse was increased in frequency and hard, and the nostrils dilated; there was much uneasiness and other indications of suffering. A fracture of the first phalanx was now suspected, but a most careful examination could detect nothing of the kind. On the morning of the 14th the mare was found lying in her stall and struggling very much; indeed, she appeared to have been down during nearly the whole night, as she was very severely rubbed and contused on the head and those salient parts of the body in contact with the floor. The leg was immensely swollen from the hoof to some distance above the hock, the swelling being hard and hot, and where the skin was destitute of pigment in the pastern, it showed various tints, from light red to deep purple. There was also an exudation of reddish-coloured serum on the surface of the skin in the region of the fetlock and pastern.

There were none of the characteristic symptoms of Lymphangitis, though the animal exhibited as much suffering as is witnessed in a most acute attack of that disease. With great difficulty she was removed to a hospital box and placed in slings, and another examination made in order to ascertain the existence of fracture, the appearances being very similar to those present when fracture of the first phalanx implicates the fetlock joint. The examination was extremely difficult, because of the excruciating pain and dense swelling, and it only yielded negative results. The animal's countenance testified to the intense agony she endured; the foot could not be placed on the ground, and the limb was in a state of continual flexion and extension. The case looked extremely serious, and I was puzzled to know what the symptoms could be attributed to, if not to fracture. Some years ago, while I was at Chatham, an officer's horse presented analogous symptoms after having had a splinter of wood driven through the frog into the interior of the foot. After death, which occurred in three or four days after the injury was inflicted, the

navicular bone was found split across its short axis. The specimen is now in the museum of the Royal College of Veterinary Surgeons.

The mare received large doses of anodyne medicines, and the limb being enveloped in blankets, cold water was now applied copiously and continúously during the day and night by means of tubing carried from the water-tap.

On the 15th all the symptoms were aggravated. The swelling was immense, and reached above the stifle nearly to the body. In the region of the hock, and down the outside of the leg, there was an exudation of blood and reddish-yellow glutinous fluid hanging in beads and long shreds to the hair. Inside the leg were a number of large bullæ containing an ichorous fluid, and where the swelling had been first noticed—towards the inner bifurcation of the suspensory ligament, as well as below the fetlock on the same side, sloughing of the skin and subcutaneous tissues had taken place. The foot, as well as all the limb nearly to the stifle, was low in temperature, nearly destitute of sensation, and separation of the hoof from its coronary attachment was commencing. Sphacelus of the limb was evidently rapidly progressing, and from the general condition of the animal it was obvious that a fatal termination could not be far off.

On the following morning early—the 16th—to the surprise of the farrier-major the mare appeared to be greatly relieved, as she was standing upon the limb and eating some grass, and he imagined she was about to recover. In two hours she suddenly dropped in the slings, and was dead.

Unfortunately, from an idea that all the grave disturbance was due to a fracture present at the lower extremity of the limb, only the leg from a short distance above the hock was preserved for examination. The skin presented the appearances above described, from the hoof to the point of section. The wounds on the inner side of the fetlock and pastern were in a sloughing ichorous condition, and on removal of the skin, which was much thickened from infiltration, there was found diffuse and extreme inflammation of the subcutaneous connective tissue, with extravasations and infiltrations of blood to such an extent that various parts appeared quite black. There was intense hyperæmia of all

the other tissues—bone, tendon, ligament, and muscles—the metatarsal bone, indeed, was red and black-red throughout. In various places, and especially in the vicinity of the articulations, there were foci of commencing suppuration. The internal metatarsal vein, from immediately below the hock to near the hoof, was greatly distended by a thrombus, which was firmer, and more uniform and lighter-coloured in the region of the fetlock than higher up or lower down, where it was nevertheless denser and more coherent than ordinary jelly. The paler and firmer portion was about six inches in length, and at one part, where sloughing had commenced in the adjoining tissues, and the vessel was surrounded by pus and fibrinous detritus, the thrombus was soft and crumbling, as if about to become purulent. The walls of all the large veins were thickened and inflamed, and they, and even the very smallest veins, were blocked with coagulated or semi-coagulated blood. The arteries were remarkably free from pathological alteration, and the external metatarsal vein contained only black jelly-like blood.

I regretted very much that I could only make an examination of this portion of the animal. In all probability important lesions would have been discovered in other, and perhaps very distant regions of the body, which would account more satisfactorily for death.

Whether this was due to exhaustion from the intense pain, blood-infection from the decomposing coagula in the veins of the limb, or to embolism of the heart, lungs, brain, or other important organ, could not be ascertained; though I am inclined to think the first-named cause was chiefly concerned in bringing about a fatal termination.

An important question arises as to whether the Phlebitis and Thrombosis were primary or secondary in this case—whether the vein was primarily injured and inflamed, or whether the inflammation had spread to it from other tissues in the neighbourhood of the vessel? I am inclined to believe that the latter was injured, possibly by a blow from the opposite foot, as the pain and swelling discovered on the morning after the journey to Ascot were in the situation of the metatarsal vein. I am aware that the formation may occur in veins without Phlebitis

being present, and this may be much more frequent than is commonly supposed—being due to debility or paralysing influence of the sympathetic and vaso-motor nerves, which again might be consequent on over-exertion and excitement. But in this instance there was evidence of local injury, and the rapidity with which the inflammation and blocking of the veins took place from this part throughout the limb, as manifested by the great and extremely painful tumefaction, extending from the hoof to above the stifle, was in all likelihood, partly, or even entirely owing to the condition of the animal at the time of injury. What, in other circumstances, might have proved to be a trifling contusion which, with appropriate treatment, would have been recovered from in a few days, became a most serious pathological condition. From high feeding and insufficient exercise, the blood undoubtedly contained an excess of fibrogenous material, which would act as a predisposing cause; and a very slight injury to such a large vessel as the metatarsal vein, sufficient to set up a trifling degree of inflammation and irregularity in the inner coat or some little defect in a valve, would lead to rapid deposition of fibrin there, obstruction, and coagulation of the blood, with quick extension of the inflammatory and thrombic process to the other veins of the limb by continuity. It is easy to understand how the great œdema and tenseness of the leg should be so rapidly developed, when we consider that the arteries were patent all the while, and conveying blood into the limb, but the veins were at the same time more or less obstructed, and therefore quite incapable of carrying away the blood again. The increased circulation in the arteries and obstructive inflammation in the veins would be intensified by the fomentations with warm warm—treatment for which I was not responsible.

Since this case occurred, and while at Aldershot in July, I had a similar one in a troop horse, which had slight Elephantiasis of the left hind leg for some time. Soon after returning from a severe field-day, the limb became greatly increased in size and painful in the extreme, while the femoral and tibial arteries throbbed violently. The horse lay down, and appeared to be suffering excruciating pain. A copious abstraction of

blood was made from the inferior circumflex artery of the foot, a strong cathartic and sedative dose of medicine was administered, and the entire limb was subjected to continuous cold-water irrigation. The following day the symptoms were more favourable, but there was great tension in the lower part of the leg. This was relieved by rather deep scarifications. For two or three days there was threatened formation of abscess, both inside and outside, where the tension had been greatest; but this disappeared, and the animal was able to take gentle exercise soon after. Had the same treatment been adopted in the other case, a different termination might have resulted.

With regard to the origin of the attack in the troop horse, this might be accounted for by defective circulation in the limb, due to the hypertrophy and induration of the skin and subcutaneous connective tissue. This would retard the flow of blood, particularly through the veins, while the horse was undergoing severe exertion, and this retardation would have a tendency to the formation of thrombi. Hindrance to the flow of blood in a living vessel is one of the two prime factors in the production of coagulation.

GLANDERS AND OZŒNA, FARCY AND PYÆMIA.

BY ROBERT WARD, F.R.C.V.S., LONDON.

(Continued from page 238.)

HAVING dwelt on the importance of a correct *diagnosis*, I will now select and describe a few interesting cases from my note-book.

In 1857 I was requested by Drs. P. and C. to call and examine a valuable brown blood cob used by them in their practice for some years, which they said had for the last year or so had an unpleasant discharge from its near nostril, and was *jugged*, as it was termed, on same side. They had the opinion of two practitioners, one said it was Glanders, the other, Nasal Gleet. It had been under treatment, but no permanent improvement resulted.

The following morning I went and examined the cob, which was in a box by itself in the orchard, where it had been some months. The cob appeared healthy, in good condition, although

the coat appeared rather thrifty, the appetite was good. I was cautioned to exercise care on approaching the animal as he was very *handy* with his fore feet, and objected to have his head touched. On manipulation I found the sub-maxillary glands hard and adhesive, the edges of nostril covered with unhealthy pus, of a gluey nature, the Schneiderian membrane injected, of a coppery colour, with soreness around the false nostrils, and considerable fœtor from the animal's breath whilst making examination. I next proceeded to *immediate* auscultation, and found the respiratory murmur—evidence the lungs were sound so far as auscultation could detect; this led me to make a more careful examination of the animal's head, so, having the cob brought to the door, I placed my hand over the upper part of the nasal bones, and was about to percuss the sinuses, when the animal showed fight, and having a firm hold, my thumb pressed over the region of the supero-maxillary sinuse, when I felt a crepitant sound given to my thumb; this led me at once to diagnose the case as one of dental origin. There was nothing outwardly to be observed, both sides appeared alike. I had considerable trouble to complete my examination, for my patient was a rebel; however, I found the fifth molar was the cause of all the mischief, and reported the result to the medical gentlemen, who were rather surprised. Having explained the nature of the case, it was decided that the cob should be prepared, and operated upon under chloroform.

Upon my next visit the animal was cast after some difficulty, the anæsthetic exhibited, the supero-maxillary sinus opened with the trephine, and the fifth molar *punched* out most successfully—not extracted, as it might be now, for at that time the Gowing, Thompson, and other valuable dental instruments had not been introduced. The cavity contained *debris* of hay, oats, etc. The parts being well cleansed and dressed with a solut. ferri. perchlor. a plug of gutta-percha was fixed in the cavity, incision brought together, and cob liberated. Advice was given as to keeping parts clean, etc., which was, of course, well understood, mineral tonic prescribed, ung. ioda c. hydr. applied to sub-max. gland, and in a few months the animal was quite well. It resumed work soon afterwards, being ridden by Mr. C., the partner, almost daily.

Now the principal difficulty in this case was approaching the patient to make a careful diagnosis, for he was a perfect rebel or brute to handle. It, however, shows us we must at all hazards devise means for doing so.

In 1861 I was requested by the chairman of a large bus company to report on the condition of two horses. One, a black, I found labouring under primary symptoms of Acute Glanders. This animal was isolated for a few days, then unmistakable evidence of Glanders and Farcy developed, and it was destroyed. The other one I found labouring under Chronic Glanders; this was a new purchase. There was at the time of my examination the characteristic gluey, sizey-like adhesive discharge, and in this instance, on both nostrils, but it was not large; there was on the near side a small hard knot, or jug, as horsemen term it, or, as we should say, an indurate condition of the sub-maxillary gland, but this was not adhesive to the bone, but slightly loose; the Schneiderian membrane was but slightly altered as far as the eye could penetrate, but still the appearance was not healthy, and high up of a slight leaden hue—no evidence of ulceration could be detected. The general appearance of the animal would not strike any one that the animal was so diseased. On immediate auscultation, corroborated by *mediate* auscultation, gave evidence that the lungs were tuberculated and in a condition of *vomice.*

The manager would not believe in the animal's condition, and had, he said, the opinion of a good authority the animal was not so diseased. The animal was sent off to the horse-slaughterer's at my earnest request, and the result proved the correctness of the diagnosis in the presence of several of the board of directors and three brother practitioners.

I have selected these two cases from many others with a view of delineating the advantages of sound clinical study and auscultation in such cases, for in the medical profession auscultation is held of the highest importance, and leads the medical practitioner to diagnose pulmonary and other affections to a degree. Professor Williams, in his "Principles and Practice of Veterinary Medicine," alluding to auscultation, says tersely: "To become familiar with the knowledge to be acquired by auscultation, much

time and labour must be devoted to it, first on *healthy*, and afterwards on *unhealthy* animals; in fact, the ear must be trained by long experience."

Again, the same author says, in alluding to the difficulties attending the operation on our patients: "Notwithstanding all these drawbacks, auscultation is of immense advantage, and by it we are enabled to arrive at conclusions that would otherwise be impossible."

The late Professor Varnell, in the *Veterinarian* of 1867, gave the profession an excellent retrospect of his practice and knowledge of those diseased conditions of the sinuses of the head giving rise to symptoms resembling Glanders, to which the student might refer with profit.

(To be continued.)

"BURSATTEE."

BY F. SMITH, M.R.C.V.S., ROYAL HORSE ARTILLERY, WOOLWICH.

(Continued from page 307.)

THE second class of blood diseases is characterized by superabundance or deficiency of some normal constituent of the blood. Some have reasoned from analogy with the occurrence of boils in man, which is attributed to the excess of acidity in the blood, that the same occurs in Bursattee. We know of no analysis of the blood of a patient suffering from Bursattee; we are not aware of any case in which even the reaction of such blood has been tested, and even if we know the blood is acid, we are not aware of how this suffices to explain the disease! Such observers consider that the lesions are natural means of removing the excess of acidity, but this is hardly in accordance with the fact that some animals are perfectly covered with Bursattee sores of long standing. And there must be some limit to the amount of acid in the system of such unfortunate patients. Also in affections of this class, Exanthemata, excess of material in the blood is accompanied by more or less febrile disturbance in the early stages, and such has not yet been traced in Bursattee. Others attribute it, not to excess, but to deficiency of the

usual elements of the blood—to imperfect nutrition, in fact; but why should this act locally on tissues requiring so little nutrition as the fibrous structures, while muscle, nerve, and other high tissues remain so well nourished that an animal may even be in good condition, so that we are told to "put our patients into training" by one of the ablest Indian practitioners of his day. Thus we have dealt with all suggested constitutional sources and have found none of them satisfactory. We may also draw attention to the following points in this connection: The hereditary transmission of the disease is doubtful, though at studs and breeding establishments this point might be elucidated; *post-mortem* examination of viscera must be performed with care, the condition of lymphatic glands and ducts being especially noted; the constitutional symptoms should be sought for and carefully noted; and surrounding conditions must be carefully recorded. It has seemed to us that "Walers" are more frequently affected than country-bred horses, but we are by no means assured on this point. Lastly, with regard to the recurrence of this affection, this seems to point to a constitutional origin, but by no means is conclusive, for we know that newly-formed tissues are liable to undergo disintegration, as we have already found described by Mr. Hurford (*vide supra*); but we have here something superadded—recurrence *only at a fixed season of the year*, and not only may a Bursattee sore itself reappear in its original position, but also fresh sores may occur in different parts of the body with a change of season. We are not prepared to say that external influences, such as weather, can excite newly-formed tissues to disintegrate; the new sores may be quite independent in their origination and progress. We must consider this recurrence later on.

That this disease is purely local, being the natural course which an ordinary wound pursues in a constitution the tissues of which are deficient in tone in consequence of long-continued high temperature, we can by no means endorse; for if such were the case, why should not ordinary wounds in other countries assume similar features in animals during exceptionally warm seasons, and whenever the system is deprived of tone? The specific nature of the products, too, is opposed to this view.

The nodules have been supposed to be ova of animal parasites, but microscopical examination at once sets the question at rest; for we cannot trace any of the processes of yelk segmentation in them, nor should we expect to find white fibres enclosing brown cells surrounded by a capsule in an ovum. But another theory of parasitic origin of the affection demands more careful examination. In the tumours we find two forms of characteristic elements—the fibres and the cells. The fibres are at first large, they shortly present the cells inside them, they break up longitudinally, and by their rupture allow the cells to escape. The latter at first are large, with several nuclei; later on we see only smaller cells, each with a single nucleus; this may be due to multiplication of the larger cells by fission, though this has not been looked for, and therefore, even if observed, would have been less likely to receive notice.* Lastly, the cells are acted upon by liquor potassæ in a very significant manner, for it removes the colouring matter as it does that of *vegetable* cells. The above processes of development of the fibres and cells remind us of the changes occurring in some of the lowest vegetable forms, especially the bursting of large fibre-like parent bodies, which allows spores to escape in certain low fungi.

The effects of glycerine may be here noted. If a thin section of a Bursattee tumour be placed under the microscope, when it is treated with glycerine it loses all trace of structure and becomes a gelatinous mass almost immediately; this can only be caused by absorption of glycerine by the fibres, which, swelling, shut the cells out from view. It will be remembered that we noted in the larger fibres transparency of the axis. These facts lead us to surmise that the fibres, large and small, are hollow cylinders, and in that respect resemble the hyphal tubes of fungi. A section of a Bursattee tumour was placed in glycerine, it became gelatinous; after three days the surface of the section had on it an extremely

* We must here recall to our minds the presence in the tumours of the peculiar brown epithelioid cells which we noted as varying in the different depths of the tumour. We noted that those in the deep part have the colouring matter confined to the nuclei, while those in the upper part have the colouring matter diffused throughout them. This looks remarkably like fission observed in cells. We might even consider these large cells as a special life-phase of the organism—a better development of the small round cells.

fine brown pellicle. This when placed underneath the ¼-inch objective presented the appearances shown in the annexed figures. It consisted of brownish cells about the size of ordinary tesselated epithelial cells, some quadrangular, others pentagonal, others oval in figure. These were of a brownish or amber-brown colour, the external part of the cells containing most colouring matter (though this appearance may be due to overlapping of their margins). With them was a quantity of granular matter. These may be plainly seen in Fig. 1; but Fig. 2 exhibits a peculiar

fig: 1.

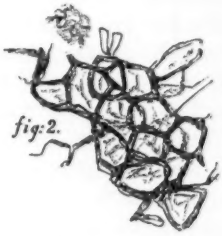

fig: 2.

appearance of the same specimen, where the amber-brown lines in their distribution and variations in size seem to us strikingly like the mycelium of a fungus.

The Bursattee nodules might be considered encysted phases of the life of the parasite, means by which spores are removed from the system in a protected condition for distribution over the surface of the ground, there to undergo certain processes of development and change before re-introduction into the animal system. Artificial cultivation seems to us a desirable line of future investigation.

Thus many conditions of the tumour tend to support the theory of parasitic origin of Bursattee. We may review some of the general conditions as noted above, and see if they can be reconciled with this view. In the first place, the periodical recurrence of the outbreak of the affection is not opposed; the regularity of this is comparable with that of attacks of Recurrent Fever, now traced to the influence of a vegetable parasite of the nature of a bacterium. It may well be that the influence of the prolonged external heat on the tissues reduces their power of resistance to this vegetable organism, which for a time gains un-

controlled power, which it maintains to the prejudice of the tissues, until the system regains tone and temporary dominion.

Nor must the fact that the disease originates in the white fibrous subcutaneous tissue be considered as militating against our theory. Vegetable germs are not so large but that they may readily penetrate the pores of the skin and pass down into the hair-follicles or sudoriparous glands, whence for them the way is easy into the adjacent areolar structure. The advent of the rainy season especially would seem to call these organisms into activity, presenting them with conditions favourable for development; cells scattered about from the Bursattee nodules would be washed to the tanks, and the germs set free would then be most liable to penetrate the system of the hosts, and would especially enter those parts most exposed to moisture, the extremities of the limbs and the lips, or those parts about which moisture may be longest retained, as the prepuce and the penis.

Thus theory does not prove adverse to that explanation of our observations which we have adopted. On every hand it gives it support.

The next point which demands from us attention is the comparative pathology of the disease, and here we have especially to examine its relations to the affection known as "Delhi Boil." We may refer for an account of this to the "Appendix to the Army Medical Report for 1869," which comprises a paper by Dr. J. Fleming, Staff-Assistant Surgeon; also to Sir J. Fayrer's paper in the *Practitioner* for October, 1875. The latter article is very short and precise, the former, as being illustrated by well-executed figures, and being somewhat elaborate, will prove the most satisfactory source of information. From it we learn that the first appearance of the disease resembles a mosquito bite with the skin slightly elevated; from this small red spot a number of blood-vessels radiate, it becomes swollen without pain, throws off its epithelium, and becomes smooth and flat on its surface, shining and transparent. The growth slowly enlarges, and spreads from the centre by little ridges of smooth skin, pits on pressure, with a stinging sensation. Becomes itchy, soft, and vascular, with a peculiar brownish appearance, and the hairs fall off, leaving the roots and parts of the shafts. The tumour is

softest on the top, and here ulceration commences. The material of which the growth is composed attains its maturity at its upper part, and no injury seems necessary to originate the ulceration. Little yellow bodies exist in the tumours; "when subjected to chemical reagents they are found to consist of an outer coating of epithelial cells like those of the skin, arranged so as to give the impression of a fibrous envelope, but easily separated by a weak solution of liquor potassæ. The interior of some contains a semi-fluid, whitish-looking substance, made up of amorphous granular matter; of others, a fine hair or a portion of one." A peculiar cell-growth replaces the normal skin-structures; the fibrous tissues of the skin, yellow and white, alone resist its invasion; a transverse section presents fibrous tissue forming a matrix for masses of cells, enclosing them in groups the same as in an ordinary fibrous tumour. "The cells are oval or spherical, of a yellowish-brown colour, the cell-wall easily destroyed by pressure, and they mostly contain two or more nuclei. In others no nuclei can be detected, but merely an indistinct cell-wall resembling the sporules of a fungus. Acetic acid renders the cell-wall and nuclei clear, liquor potassæ dissolves it, leaving the nuclei as little globules, some of a reddish colour, which are insoluble in ether. No mycelium or distinct traces of fungi were detected in any section of these tumours, excepting little globules, some of a light-red colour, which resisted the action of ordinary reagents, and whose nature is uncertain." "The brown, apparently cellular substance may be considered the actual exciting cause of the disease, and by means of which it invades the healthy structures of the skin, producing changes which ultimately terminate in its own degeneration into pus." After reading the above account we are struck with, in the first place, the similarity of the specific elements of the diseases. In each case this element consists of rounded cells of a remarkable brown colour; in size, shape, and position these agree, and further examination of the Delhi Boil organisms may serve to disclose many of those phases of development which we claim to have observed in those of Bursattee. The structure of the tumour in each case is the same, and in both we find nodules—Fleming's "little yellow bodies"; in reference to the minute structure of

these some differences may be mentioned. We cannot coincide with the opinion of Fleming that they result from change of hair-bulbs, for in no case have we found them in connection with hairs; they occur in all parts of the tumour, and continue to develop in parts where all trace of hair-follicles has been removed by the diseased process. No mention is made of processes radiating from the Delhi Boil nodules, but we believe such might be found on further examination.

With such similarities in the two diseases, we have no hesitation in terming them manifestations of the same pathological conditions, and we have directed our investigations towards a proof of the absolute *unity* of the affections. We experimented as follows:— 1. Ten syces (native grooms) inoculated on the arm with cells and pus from a Bursattee sore in the ulcerative stage. Each man was kept standing in the sun, until the matter placed on the exposed surface of the dermis dried. Negative result in each case. 2. A salootree (native farrier) was similarly inoculated, and on the third day, feeling some tingling about the wound, not willing to become a martyr to science, he surreptitiously cauterized the place and spoilt the experiment. 3. Before the men above-mentioned would submit to the operation, I inoculated myself in their sight, and several times repeated the experiment; in each case with negative result. 4. Inoculated a dog with Bursattee matter on the nose and ears, with negative result.

Thus of the experiments performed, by far the majority proved negative. But we might have expected this, for the chances in such trials are numerous against success, there being so many conditions of the subject and of the inoculation material essential to the free transmission of pathophytes from animals of one species to those of another. So experiment 2 is of much interest and should encourage us to pursue this line of inquiry, especially as the Delhi Boil is said to be communicable from man to the dog, and Dr. Fleming has proved that it is communicable from man to man by inoculation of himself. It is not essential to the *analogy* of the affections that they be intercommunicable; for, as is the case with certain known parasitic vegetable organisms, as forms of Tinea, each species of animal may have its own form of parasite, not, in many cases, transmissible to other

hosts. We have noted many differences between the organisms seen by Fleming in "Delhi Boil," and those seen by us in Bursattee; of these many might be attributed to the difference in the soil in which the plant is growing, but some *may* be due to inherent differences in the characters of the species.

The symptoms of the diseases differ somewhat, but not more than we might *a priori* expect. And many of those, which we have learned as above, from Dr. Fleming, may be explained by the differences between the integument of man and that of the horse—the thicker and pigmented condition of the epidermis, as well as the abundance of hairs, serving to conceal some of the earliest stages in the latter animal. Mr. Spooner Hart, in his able papers on this subject, in the *Veterinarian* for 1872 and 1873 (which have now for the first time come under our notice), discusses this question, and arrives at a different conclusion from ours; but we are not prepared to accept his reasoning, especially as several points of Delhi Ulcer, from which he draws his inferences, differ essentially from those mentioned by Dr. Fleming.

Causes of this disease at present are debated. "Max" (in VETERINARY JOURNAL, 1876, i.), attributes a great deal of importance to flies as active propagators, and this view is very tenable; however, it hardly accords with the results of four experiments, as follows:—Bursattee matter was placed on the surface of a wound caused by accident, and of a few days' standing, in four cases, but in neither did the wound assume a Bursattic character.

We must not consider these sufficient to base any conclusions upon. It is a well-known fact that, during the rains a simple wound may assume a Bursattic character. The occurrence of the disease, especially during the rains, led us to examine the water from the wells whence the supply for the men and horses was procured, with considerable care; and we did this the more minutely since human practitioners suspect this of being the cause of the "Delhi Boil." The result of this examination was as follows:—

Microscopical examination of well-water from R. A. Lines, Lucknow, N. W. Provinces.—Clear, but containing very minute particles just visible to the naked eye. Under 1-inch power: was found

to contain fungi, epithelioid cells, animal organisms, fibres, pigment granules (black and yellow). Under ¼-inch objective: *fungi* were numerous, and had a great tendency to increase in size, and combine together in masses. The masses varied much in form, but the elements composing them seemed to be strung together, and resembled a half-open fan with a very long handle, with bright centre and dark outline. Around these the epithelioid bodies collected, and the living organisms, monads, etc., worked their way in and out of the mass in an extremely active manner, most of them being rounded, ciliated bodies (Infusorians). The *epithelioid cells* were principally *of a bright yellow colour, with nuclei and nucleoli, the largest containing other cells, some of which were elongated and nucleated. Others were perfectly colourless, had a double contour, and strongly refracted light.* Some of the smaller, non-refractive cells possessed an elongated nucleus. *Some peculiar elongated bodies, yellowish, with brown bands about them, were present.* The *fibres* were large, stretching often completely across the field of vision, dark margin and bright centre, finely granular in parts, and adherent to them were epithelioid cells and fungi. Most of them were twisted. We also observed the larva of probably a dipterous or neuropterous insect—a dragon-fly—with large eyes, external and highly active movable branchiæ, which passed rapidly across the field.

Chemical analysis of water from R. A. Lines, Lucknow:—

Water.	Total solids given as grs. in imp. gallon.	Chlorine as grs. in gallon.	Free Amm. as parts in one million parts water.	Albuminoid Ammonia as parts in one million of water.
Filtered	20·4	0·40	·13	·140
Unfiltered ...	20·6	0·35	·16	·060

Remarks.—The filtered and unfiltered waters of these wells are bad; and the analysis shows it is not improved, but rather made worse by being filtered.

(Signed) MURRAY THOMPSON, M.D.,
Roorkee, April 23rd, 1877. Chemical Examiner.

The yellow elements, the description of which we have had placed in italics in the above report of the microscopical examination, arouse our suspicion, but we are not in a position at present to do more than draw attention to their presence; future research may demonstrate a connection between them and the coloured bodies found in Bursattee tumours and Delhi Ulcers.

Our opinions with regard to treatment of the disease in its early stages have been given in the VETERINARY JOURNAL, 1878, vol. ii., p. 321, but since that time we have had many opportunities of trying the method described there in chronic cases, and the results have by no means been so satisfactory. We may here quote a passage from Dr. Fleming's report, we think, with considerable advantage: "The treatment which experience has found the best is the same that follows from the pathology, and consequently may be now perfectly relied upon, and will, if carried out, prove thoroughly effectual—viz., destroy the cell substance and you cure the disease. This may be effected in various ways, but a strong caustic solution, potassa fusa, or nitrate of silver, might be used; and when the growth is destroyed, and not until then, treat the resulting ulcer on ordinary principles." We have tried the potassa fusa treatment in Bursattee with fair success, but its action is difficult to control. Perfect removal of the diseased parts by means of the knife has proved in our hands most successful, but the extent of the infiltration into the surrounding tissues necessitates considerable removal in order that no specific products remain. We have tried arsenic and iron internally; also iodide of sulphur applied to the wounds, but are not prepared to base any conclusions on the results. Our views on the nature of the disease suggest prophylactic treatment, but in the present state of the Bursattee question we cannot give any rules in this matter. [A glycerine solution of caustic potash would be worth trial.]

In conclusion, we have but to express a hope that our views may be tested and substantiated by subsequent observers. We have in this work made our observations with the greatest care, and have noted our results as they presented themselves, and on them have based our theory. The latter is entirely an after-growth, and its general acceptance, or the reverse, cannot influ-

ence the new facts by which we have endeavoured to advance the knowledge of Bursattee. We are not the first to advance a parasitic theory of Bursattee, but we believe we are the first to base such a theory on anything more than mere conjecture. The lines which research ought to take have been pretty thoroughly indicated during the course of our paper; but we may urge in recapitulation: 1. That the "cellulose tests" be applied to the cell-walls; if responded to, these would be conclusive as to the correctness of our views. 2. That the colouring matter of the epithelioid and round yellow cells be carefully examined and compared, both *inter se* and with known colouring matters, animal and vegetable. Thus it may be determined if the light-yellow, amber-yellow, and brown are simply results of changes from life-progress of the organism (the Sorby-Browning spectroscope is the best instrument for this investigation). 3. That the fibres be carefully examined with higher powers, and thus the question as to their hyphal nature be solved. This is, however, not an essential point of the theory, many facts of the cell-division and peculiarities of the cell contents of the distinctive Bursattee organisms tending to the conclusion that they are algoid rather than fungoid. 4. The connection, if any, between the round, brown cells and the epithelioid brown cells must be traced. 5. That the life-history of the organism be traced, firstly, by cultivation of the different forms of cells in various media, as especially glycerine or serum (from œdema or any other subcutaneous accumulation); secondly, by examination of suspected sources, especially the water-drinking, and artificial experimentation with such organisms of specific appearance as occur during the course of observation. 6. Multiplication and variation of the above-described inoculation processes. 7. Careful *post-mortem* observations, microscopical and necroscopical. 8. Statistical records as to hereditary transmission of the disease, prevalence in sex and breed, influence of age, temperament, and general management; also geographical distribution, and influence of treatment on the various phases of the disease.

SPECIAL FORMS OF TORSION AND DISPLACEMENT OF THE COLON IN THE HORSE, PARTICULARLY IN REFERENCE TO THE CAUSE OF DEATH; AND THE USE OF THE TROCAR AND CANULA IN TYMPANY.*

BY PRINCIPAL WALLEY, ROYAL VETERINARY COLLEGE, EDINBURGH.

IN introducing this subject to your notice I do not intend to make any lengthened remarks, but merely to supplement those which I made in the paper which I read at the meeting of the Liverpool Association in 1875.

Since that time I have been enabled to diagnose, with almost unerring accuracy, three very important forms of twist and displacement. These are: 1stly. Torsion or displacement of the double colon, with venous strangulation; 2ndly. Torsion of the double colon with arterio-venous (complete vascular) strangula tion; 3rdly. Displacement of the double colon—sigmoid flexure —inan obliquely forward direction, from left to right and across the small intestine.

Before describing these lesions in detail, I will briefly refer to the causes which are usually in operation to produce them. They are more frequently seen in "lorry" or heavy than in light horses, probably owing to the fact that the bowels of the former are more voluminous and more largely filled with food and water. The sigmoid flexure is pre-eminently liable to displacement, on account of its comparatively free position, and from the fact of its usually being the receptacle of a large quantity of semi-fluid matter.

The actual displacement may be, and in my opinion usually is, produced by either of the three following causes: (1) By rolling about in the agonies of Colic, or when turned out to grass, by pitching violently forward on the nose in attempts to lift a load, or from losing the feet in slippery weather, or by falling over an embankment; (2) By the powerful contraction of the muscular walls in spasms of the intestines; (3) By the action of

* Read before the Scottish Metropolitan Veterinary Medical Association, on September 24th.

gas (Tympany) in the interior of the gut when it is comparatively empty. The power of imprisoned gas to displace a knuckle of intestine is well and often seen in making autopsies of horses whose intestines have become inflated with gas from decomposition of their contents after death.

In any of the lesions I have particularised the attendant symptoms may not be developed or observed for several hours, and in the third form for many hours after the occurrence of the accident which has given rise to them. Their advent is undoubtedly most rapid in the second form. I am satisfied that in many cases a horse receives displacement or partial torsion of the colon when at work, and does not evince any decided symptom—not even Colic—for hours; in fact, not until the congestion of the intestine becomes pronounced; and in the third form, not until the small intestine and stomach become tympanitic.

In the *first form of colic displacement* the symptoms, then, may appear suddenly; in many cases, however, they are preceded by prolonged Enteralgia and symptoms of Enteritis. In due course the previously full, strong, and irritable pulse becomes softer the injected mucous membranes gradually paler in colour, and the body bedewed with moisture; the countenance anxious, and the breathing somewhat hurried and laboured. The head is turned wistfully to the flank or side, the enteric pains are more subdued, but still persist; and most markedly of all, if attempts are made to distend the jugular vein for the purpose of bleeding, it will be found impossible to render it tense, difficult to drive the fleam into it, and when opened only a comparatively small quantity of blood can be abstracted, and that is usually of a dark colour. This condition of the jugular becomes more pronounced as dissolution approaches. The posterior bowels are usually emptied rapidly, the fæces being pultaceous and passed in small quantities at the outset. The temperature does not, as a rule, exceed 104° F., and on rectal exploration the resilient tumour, which I have before described as characteristic of intestinal torsion or displacement, may be felt, as may also the tense and twisted longitudinal bands of the gut. After death there is usually sero-sanguineous effusion into the peritoneal cavity. The occluded intestine is enormously increased in bulk, in weight,

and in thickness. The peritoneum is sometimes intensely congested and ecchymosed—in this case it is always associated with peritoneal effusion, at other times it is nearly normal in colour. On making an incision through the intestine, a quantity of fœtid gas escapes. The egesta is usually mixed with large quantities of blood-serum, and not infrequently coloured with hæmatin, owing to solution and transudation of the liæmato-globulin from pressure; at other times it is mixed with coagula of blood, or large quantities of fluid blood. The mucous membrane is thickened, softened, dry, corrugated, and roughened on its free surface, of a dirty brown or green colour, and frequently fissured. The sub-mucous and sub-serous tissue is infiltrated with serum to the extent of from $\frac{3}{4}$ to $1\frac{1}{2}$ inches, while its small vessels are engorged to their utmost. The arteries are empty, the veins fully distended with semi-coagulated blood, which oftentimes resembles damson pulp, and is composed mainly of coloured corpuscles, many of which are ruptured and their walls shrivelled. The lymphatics on the exterior of the intestines are charged with lymph. The line of demarcation between the involved and free portions of gut is very pronounced, as it is also in the second form.

In the *second form of colic displacement* the accompanying symptoms are developed suddenly and with great violence. The pulse is bounding, almost incompressible, the jugular and superficial veins—full of blood—can be readily distended, and when opened the blood flows with great force, and is bright in colour. Venesection only reduces the pulse to a slight degree, and gives but little relief from pain. The mucous membranes are intensely injected, perspiration profuse, tremors marked, eye prominent, countenance desperate, and the pain is persistent and agonising, manifested in a great variety of ways, and cannot be relieved. Death usually takes place in from four to six or eight hours, while in the first form life may be prolonged for sixteen or even eighteen hours. On *post-mortem* examination, the intestine is found to be black, mortified, and friable, and the veins and arteries plugged. A very fœtid odour is evolved from the strangulated intestine and its contents.

In the *third form of intestinal displacement* the symptoms are

manifested gradually, and usually secondarily—*i.e.*, after an animal has suffered from Enteralgia from any cause for a number of hours. Only two well-marked cases of this form have come under my notice. The pain is subdued; in fact, the animal may stand quiet for a long time, or may evince occasionally accessions of pain. The pulse is quick and weak, the mucous membranes injected, the breathing laboured, occasionally spasmodic; the temperature about 103° F., with moderate perspiration, and an anxious expression of countenance; there is continual œsophageal regurgitation of fluid and gas, great distension of the œsophagus being observed with each eructation, leading to the supposition that the animal is suffering from impaction of that tube. On auscultation the metallic gurgling sound peculiar to the movement of fluid and gas in a hollow viscus is heard along the whole course of the œsophagus, in the thoracic region, and over the stomach in the epigastrium. The animal may vomit a large quantity of fluid before death; in any case there will be attempts at vomition.

After death there may be an entire absence of congestion or inflammation of the colon. The small intestine usually presents punctiform hæmorrhage, and the gastric mucous membrane is more or less inflamed, this being the result of irritation by the retained ingesta and the medicines. The stomach, intestines, and cardaic end of œsophagus are distended with gas and fluid. The stomach, owing to its state of distension and the weight of fluid, may become ruptured if the animal falls.

In none of these forms have I referred particularly to such concomitant symptoms as yawning, sighing, neighing, gnashing of the teeth, clenching of the jaws, curling of the upper lip, backing against prominent objects, or pressing the breast against the manger, or the head against the wall, straining and groaning when the hand is introduced into the rectum, knuckling of the hind fetlocks, cold sweats as dissolution approaches, gradual muscular exhaustion, tympany, and jerking breathing, as they may accompany other forms of intestinal obstruction, and many of them may be absent.

The differential signs of these three forms of colic displacement, then, are plain. In the first, we sometimes have a prior

period of Enteralgia, which may be, and usually is, attributed to indigestion or Enteritis, accompanied by a full strong pulse and injected mucous membranes, and the jugular can be readily distended. This is followed by gradual emptying of the jugulars, failure of the pulse, lowering of the temperature, and diminution in the colour of the membranes. The pallor of the latter never being so extreme as in ordinary cases of internal hæmorrhage. Confirmatory signs are sometimes obtained by rectal exploration.

In the second form we have the intense and uninterrupted agony, the injected condition of the mucous membranes, the fulness and strength of the pulse, the fulness of the jugulars, and the rapidity with which death takes place. It may be asserted that these symptoms are those of Phlegmonic Enteritis, and to some extent they are; but the dry, furred, and livid condition of the buccal membrane so characteristic of Enteritis is absent, and the temperature is not so high. Moreover, death *rarely* takes place from Enteritis in so short a time as six or eight hours. Many of the so-called cases of inflammation of the bowels are nothing more than one of these two first forms of colic torsion.

The difference between the train of symptoms here alluded to is easily explained. In these cases in which there is only venous obstruction, the blood is constantly being pressed into the veins through the arteries, and as it cannot escape by its natural channels, the former become distended with blood to their utmost limits, and the pressure continuing, the fluid parts of the blood are finally forced through the walls of the capillaries into the intestinal cavity, into the peritoneum, and into the submucous and sub-serous tissues; the denser portions of the blood and the red corpuscles accumulating in the obstructed veins. In many instances the walls of the capillaries give way and extravasations result. The culmination of all this is *death by internal hæmorrhage*, the intestine acting the part of a sponge, through which the life-blood of the animal is gradually drained and squeezed into the peritoneal and intestinal cavities, and the connective tissue of the bowel. Hence the diminution in the colour of the injected membranes, the failure of the pulse, and the progressive emptying of the jugulars.

Where there is arterio-venous obstruction, mortification takes place rapidly, and death is produced by nervous exhaustion. The amount of blood lost to the circulation is so slight as not to interfere with the pulse or jugular veins.

The *rationale* of the symptoms in the *third form* of displacement is as follows:—There is not any, or but slight strangulation of the large vessels of the displaced colon; consequently circulation is not obstructed as in the two first forms, nor is pain produced. The compression exerted by the colon on the small intestine (duodenum or jejunum) forms an effectual barrier to the further passage of ingesta; consequently, all the fluids introduced manually, or by the animal voluntarily drinking water, into the stomach and intestine are imprisoned; eventually gas is evolved, and the stomach and intestine are distended to their utmost. The gas, by its own diffusive properties, passes into the œsophagus, anti-peristalsis takes place, and this forces the fluid also into the œsophagus, thus producing the regurgitation and borborygmal sounds already alluded to. Death in these cases is produced purely by exhaustion, and by interference with the normal functions of organs.

The cause of death in these three special forms of colic torsion and displacement is that which I have assigned; but while saying this, I must call your attention to a recent translation by Mr. Steele of some remarks made by M. Bouley, to the effect that death is produced by putrid infection—*i.e.*, "absorption of products of putrefaction from the alimentary canal." I cannot agree with this statement, as I think it is highly improbable that such absorption could take place with the intestinal parietes in the condition I have described, and all the symptoms accord with the conditions I have pointed out.

Now as to the use of the trocar and canula in Tympany. I have adopted this method of giving relief to horses for the past seven years, sometimes affording immediate and permanent relief at the first introduction of the canula; at others failing to obtain the slightest benefit through introducing the canula a dozen or twenty times in different parts of the abdomen—wherever, in fact, it has appeared to me that the greatest amount of gas was imprisoned. The conclusion is natural, that relief will be most

certainly and rapidly afforded in these cases in which the Tympany is circumscribed and due to decomposition of food, in which condition the gas passes freely through the canula without blocking it up; whereas in fermentation—with the ingesta, fluids, and gas forming a seething mass—the canula is constantly blocked, and the quantity of gas liberated is comparatively small. In my earlier experiments in this operation I found that very frequently I entirely failed to relieve my patient, and I soon discovered that, in some cases at least, my canula was too short. For the past five years I have employed a long (seven inches) curved trocar and canula, about a quarter of an inch in diameter, the advantages of which are: Firstly, that owing to the curve, the open extremity does not pass into the ingesta and become blocked, but by remaining in the upper part of the intestinal tube, it allows of the free exit of the gas; secondly, it is not so liable to become displaced by the peristalsis of the intestine and the movements of the animal.

In introducing the trocar and canula when an animal is on his back or side, it must be borne in mind that the relative position of the ingesta and gas are altered, the former gravitating to the lower part of the intestinal cavity, the latter ascending to its upper. Due allowance must also be made for the thick layer of abdominal fat which is always present in fat animals. The removal of the hair and the making of a small incision in the skin facilitate the introduction of the trocar; but in making this incision an unlooked-for accident may happen, viz., the infliction of a large wound by the sudden contraction of the muscles at the moment the lancet is introduced. Hence the necessity for gathering up a small fold of skin, where practicable, between the finger and thumb before making the incision.* The canula may, if it is thought advisable, be left *in situ* for several hours with impunity; but if any sign of displacement is observed, it should be withdrawn, as its free extremity would produce considerable irritation of the peritoneum. It may be utilised for the introduction of antiseptics directly into the intestine, and in cases of twist or displacement where the

[* All danger would be obviated by employing rowelling scissors to cut through the skin.—Ed. *V. J.*]

tympanitic intestine can only be felt through the wall of the rectum, there should be no hesitation in introducing the canula through this gut. The use of the canula in the circumscribed Tympany accompanying torsion and displacement is a point to which I wish particularly to direct your attention. I am satisfied that some cases of partial twist and displacement are cured by the spontaneous reduction of the involved knuckle of intestine, and that not infrequently the gradual removal of the imprisoned gas by absorption or otherwise is an important factor in this reduction. In any case, the longer the gas is allowed to remain in the intestine, the greater is the probability of congestion and mortification resulting, and the more certainly will the involved bowel become paralysed subsequently; further than this, the removal of the pressure exerted by the gas must give some relief from pain, which, be it remembered, is often the actual cause of death in these cases, and the character of the evolved gas will enable us to decide as to the existence or non-existence of mortification. If necessary, the tapping should be repeated again and again, and in different situations. I have never yet seen any ill results follow the punctures, and if any hesitation is felt, the small trocar and canula attached to the hypodermic syringe may be first introduced.

ARTIFICIAL EYES IN HORSES.

BY THE SAME.

IN the October number of the VETERINARY JOURNAL for 1875 an article on this subject, by the late Mr. William Field, with some remarks by the editor, will be found.

An opportunity occurring, I last year determined upon proving the utility or otherwise of the horn discs, and through the kindness of Mr. Dollar, junr., I obtained one of these, manufactured by Messrs. Arnold. The subject of the test was a very valuable "lorry" horse, whose eyeball had been burst some months previously in a most unaccountable manner, while his driver was away at his dinner. All signs of inflammation in the injured eye had subsided, but the owner did not like the unsightly appearance it gave to the animal's face. The introduction of the disc

was accomplished in the manner described by Mr. Field with the greatest ease, and as observed by that gentleman, the difference in the appearance of the animal was striking. The disc, however, was too small, and during the night it became displaced. A few days subsequently I obtained a larger one, and after it had been allowed to remain *in situ* for four or five days, catarrhal inflammation of the conjunctive was induced, necessitating its removal, and the application of measures for the reduction of the inflammation. The same result followed the re-introduction of the disc several times, and I abandoned the idea of using it permanently; but the experiment incidently illustrated the value of the disc in the cure of Entropium. For some time prior to the use of the disc I had noticed that Entropium of the upper lid was gradually taking place, and I was contemplating an operation for its prevention, but I found after the disc had been used for a short time that the tendency to inversion was reduced, and by its repeated use for a few days at a time I have now succeeded in doing away entirely not only with the actual inversion, but also of any tendency to it.

While referring to this case, I may direct your attention to the great benefit to be derived from the administration of iodide of potassium and calomel (alternated) in Lenticular Cataract. In this particular case, the uninjured eye became the seat of this lesion about sixteen months after the receipt of the primary injury; and what was worse, the cataract developed insidiously, so that when I first saw it its formation was complete; nevertheless, by persistence in the use of the above-mentioned agents, and the occasional application of ungt. hydrarg. iodid. to the side of the face, I had the pleasure of seeing the Cataract dispersed, a small spec alone remaining, and vision being perfect.

CASES RECENTLY OCCURRING IN PRACTICE.

BY A. E. MACGILLIVRAY, V.S., BANFF.

1. *Tubercular Sarcocele of the Cord.*—This took place in a one-year-old ox, which had been castrated when about six weeks old. When I was asked to attend him he presented all the appearance of never having been castrated, the tubercular deposits on the end

of the cords almost exactly resembling two testicles. Upon manipulation, however, one could easily discover that they were too hard and nodulated to be testicles.

The animal being otherwise in perfect health and good condition, I at once determined to remove the two hardened masses. Accordingly, having thrown and properly secured my patient, I dissected out first the one and then the other tubercular mass, and removed each by torsion. This averted hæmorrhage, which is a great consideration in such cases—I don't suppose there was an ounce of blood lost altogether. I put a single stitch through the lips of each wound, and poured a good supply of carbolized oil into the cavity in each side of the scrotum.

The parts excised weighed over six ounces each, and were composed of nodules of tubercular matter, of a rich yellow colour. The animal made a fine recovery, and is now, five months after the operation, in grand condition.

2. *Engorged Frontal and Superior Maxillary Sinuses.*—This case occurred in a very handsome one-year-old filly. When I was called, four months ago, the right nasal chamber was completely blocked up, not a vestige of air getting either in or out, and the left side was becoming so confined that the noise in breathing could be more heard more than a hundred yards away. I could find nothing wrong with the teeth.

I told the owner (a lady) that the only remedy was to trephine at once, and so evacuate the imprisoned matter; for I was certain, from the abominable odour of the breath, that I had to do with a purulent and not a serous collection.

Thinking it always best to have professional help at hand in such cases, I dropped a note to my friend, Mr. Cooper, of Fordyce, and in due course we met, and threw and properly secured the filly. The greatest bulging or swelling existing in the frontal region, I resolved to trephine for the frontal sinus, and accordingly did so in the exact spot recommended by Peuch and Toussaint (see page 177 of their admirable work); and I am happy to say that I hit the right place, and evacuated a great deal of very badly-smelling thin as well as inspissated pus. I syringed out the sinus with tepid water; and after doing so, I introduced my finger and found that the opening through

to the superior maxillary sinus was quite patent, so that Mr. Cooper and I both considered it unnecessary to trephine the latter sinus, more especially as there was little or no preceptible external bulging in that region.

The filly was left without any treatment for a couple of days; but after that interval I had the sinuses syringed out daily with tepid water and carbolic acid. This treatment was continued for a fortnight or so, and before another fortnight she was completely convalescent and all signs of the disease had disappeared.

In cases such as the above I have ceased using strong caustic injections, as I consider them too irritant for the delicate membrane lining the sinuses. Tepid water, with a slight dash of carbolic acid, will be found to do admirably.

3. *Relapse of Disease in Superior Maxillary Sinus after four years.*—This horse was operated on when one year old, and he is now five. Previously I trephined both superior maxillary and frontal sinuses—there being unfortunately no connecting opening between them; an immense quantity of golden-yellow serum was then evacuated. Just now I found only the superior maxillary sinus affected on the right side, with a purulent discharge from the nostril of the same side. I did not find it necessary to trephine in this instance, as I managed to push a large-sized strong teat catheter through the spot previously trephined, and thus allowed a pretty large quantity of offensive purulent matter to escape.

The injection of tepid water and carbolic acid daily for twelve or fourteen days had the desired effect, and I have heard no more of him.

4. *Blood-Poisoning from a Diseased Tooth or its Socket.*—This case occurred in a filly, rising three years old, about last New Year. I was sent for to see her, as "she couldn't eat and had a lump on her jaw." The lump was on the right-side ramus of the lower jaw—immediately below the first and second molars. On examination inside the mouth I was regaled with a most abominable smell, which I found proceeding from the first and second molars on the off-side. None of the deciduous teeth were shed, and those of the two molars referred to were quite black and had a good hold of the gums. I took off the remains of the decidua, and found some black putrid matter between them and the per-

manent molars. This matter had a most disagreeable effluvia, and appeared to dip down between the inner side of the first permanent molar and its alveolus or socket; immediately below this was the *lump*, which was quite hard and unyielding. I cleared away all the putrid matter as well as I could, and brushed the parts with an astringent and carbolized wash. The dressing of the parts was continued for a few days, and the filly began to eat a little better; but the lump and the noxious smell remained.

One morning, about a week after my first call, I was sent for in a great hurry. The filly was suddenly taken very ill; she was rising and lying often, breathing very hurriedly, and sweating profusely. Somehow or another I dreaded the worst, and accordingly, by the time I arrived, she was dead! She died within three hours after the severe attack. I made a very minute *post-mortem* examination, and found all the symptoms of a blood-poisoning present, extensive deposits of yellow serous exudates in all parts of body; spots of ecchymosis on all the serous membranes; in fact, to my mind, the case was but too evident—viz., blood-poisoning supervening on absorption of part of the putrid or diseased material about the tooth or jaw; for the inner part of tooth-socket appeared much discoloured all the way down to the lump, which latter was dark brown in colour, very hard in consistence, and seemingly attached to or part and parcel of the maxillary bone.

On mentioning this case to my neighbour, Mr. Cooper, of Fordyce, he informed me that about the same time he had a horse with a putrid or caried tooth and jaw, which died very suddenly, with like symptoms, but he never thought of making a *post-mortem* inspection.

GLANDERS AND FARCY IN INDIA.

BY A. E. QUERIPEL, M.R.C.V.S., R.A., ON SPECIAL DUTY, PUNJAB, INDIA.

I HAVE before drawn attention in the VETERINARY JOURNAL to the existence of this disease as it is observed in India, and having lately been employed for the purpose of reporting on its prevalence in the Punjab, and also subsequently for the purpose

of endeavouring to exterminate it from the Grand Trunk Road, I shall now lay before your readers a short outline of an outbreak of the malady, the existence of which was at one time denied in this country; in fact, I may say that even now-a-days there are many old Indian officers who would deny its presence.

The line of rail, extending as it only does to Jhelum, *dâk* service, or mail coaches, are the only means of travelling between that place, Rawalpindi, and Peshawur. On this line, which is 170 miles in length, about 400 horses are employed; while, again, between Rawalpindi and Thull—a distance of 172 miles, but on which the traffic is more restricted—250 only are used.

I had always entertained the idea that Glanders was in a measure prevalent in the Punjab, but I was totally unprepared to find the disease so widely spread. In the following return will be seen the numbers which have been discovered and shot from April last, whilst others still remain under police surveillance; and I may add that, in addition, seventy-six deaths had occurred from this disease during the previous twelve months.

Line.	Government *Dâk* Horses.	Ekka Ponies.	Total.	Remarks.
Peshawur ...	29	1	30	Ekka ponies are animals used in small carts by natives when travelling from place to place.
Jhelum ...	10	1	11	
Kohat and Thull	12	1	13	
Murree ...	1	2	3	
	52	5	57	

During this time, numbers of officers' horses and baggage-animals were daily proceeding along the road on their way to join the Khyber and Kurrum columns, and therefore the danger of the disease reaching our troop horses at the front was very great. No time was to be lost. I had seen baggage-animals in close proximity to most virulent cases of Glanders, and therefore I applied for authority to destroy all affected horses, and also for power to place under police surveillance any that might be considered suspicious. This was immediately granted, and further, I am glad to say that Government has laid down the clauses of the penal code under which persons can be prosecuted for driving affected animals. This, considering the total absence

of legislation on the subject, must be looked upon as a step in the right direction; still, I feel that until a special Contagious Diseases (Animals) Act is passed very little will be done, and to this the attention of the veterinary profession should be turned; for in a country like India, where so much depends on the beasts of burden, the means of arresting the progress of contagious diseases should always be at hand, without having to wait for special authority, as is the case at the present time. I trust, however, that by the steps which Government sanctioned on this occasion, the disease may be greatly lessened, at least on the Trunk Road; but much more is still required. I feel fully convinced that all the large towns and villages are centres from which the disease becomes disseminated, and the fact that these Ekka ponies have been discovered goes far to prove the truth of the assertion that they belong to inhabitants of various places, mainly bordering on the Trunk Road, and of course at present are only casually detected. If, therefore, Government wishes to rid the country of such a dreadful scourge, most careful inspections will have to be made, and time alone will effect this much-desired object. Government has already sanctioned the employment of six *salutrees*, or subordinates, and I trust that with attention to sanitation, etc., the disease will entirely disappear from the *dâk* stables. The buildings in which cases have occurred have been thoroughly disinfected, and in many instances entirely abandoned. We therefore have every reason to hope that at least the worst of the business has been seen. I feel, however, that as soon as the present strain on owners of horses is relaxed the malady will re-appear; the natives will purchase any animal, however much diseased it may be, and will take steps to conceal him. Thorough and constant supervision is therefore required, and now that Government has taken the matter in hand, and has seen the danger which is incurred by allowing it to remain unnoticed, I trust that this will be but the stepping-stone to a higher system of veterinary organization, which will obviate and render impossible a state of affairs such as I have described.

ON DISEASE OF THE MUSCLES OF THE HIND LEGS OF COWS, FOLLOWING PARTURIENT APOPLEXY, ETC.

BY "CYCLOP."

ONE of the annoying and troublesome *sequelæ* of "Milk Fever" is the inability of the animal to rise. Although in all other respects apparently quite restored to health, the cow remains down for weeks, perhaps for months—in fact, until it either dies or is slaughtered. When a *post-mortem* examination is made, the muscles of the thighs and quarters are found to be a mass of disorganised tissue.

In the March number of the VETERINARY JOURNAL, in a brief report of the discussion which followed the reading of an able essay on Milk Fever, before the Liverpool Veterinary Medical Association, Messrs. Barnes and Elam both stated that they had met with the same diseased condition of the muscles as that to which reference is now made. A wish may be expressed that a fuller report of their remarks had been given; for this particular sequel of Milk Fever has not been much commented upon by veterinarians. It has probably been confounded with paralysis, which it very much resembles.

But before proceeding further, it may be stated that occasionally after recovery from Gastro-enteritis and similar affections, cows are found unable to rise, and their hind legs, upon subsequent examination, are found to be in the same diseased condition as that described above. And further, instead of both, only one limb may be affected. It therefore cannot be regarded as a specific sequel of Milk Fever, although it appears to occur more frequently after that disease than after any other.

The immediate cause of the animal's inability to rise, in the opinion of the writer, is sprain of the muscles, with laceration of their fibres, and consequently extravasation of blood into their substance. Upon this hypothesis, the morbid changes afterwards found in the muscles may be readily accounted for and understood. The muscles can easily be sprained and lacerated by the animal's struggles while in a semi-unconscious state, or in trying to rise when the unconscious stage has passed. This view of the disease was adopted after examining several carcases of animals that had been slaughtered a few days after recovery from Milk

Fever, because they could not rise. The adductors of the femur and tibia, a few inches from their attachment to the symphysis pubis, were found to contain coagulated blood, and to present what appeared to be torn fibres. Examination of the diseased tissue with the microscope would throw much light upon this part of the subject, and would also determine whether any other disease —such as fatty degeneration—was present.

As favouring the view taken of the nature of the injury to the muscles, it may be stated that all the animals which have been seen to suffer from it were those which had been standing for a long time in byres, and getting little if any exercise—a system of treatment rendering their muscles soft and ill adapted to bear any unusual exertion.

The importance, practically, of being able to distinguish this from other and perhaps milder forms of disease causing inability to rise, must not be overlooked. This, generally, can be easily done, as the attitude assumed by the animal is so characteristic that it can be seen at a glance when it is affected with this disease of the muscles. The position of the hind extremities is different from that of the healthy recumbent animal; for, instead of being semi-flexed, they are extended straight forward to the shoulders, making it appear as if it were squatting. It may be able to turn itself from side to side, and to struggle round the box, but no attempt is ever made to flex the legs and get them back into a natural position. Some hard, deep-seated swellings not very sensitive to the touch, may be found at the upper part of the thigh, but there is seldom much swelling of the limbs, and there is no paralysis of the tail.

Owing to the unvarying failure of all the remedies tried, no treatment is recommended. It is best to advise slaughter, as the animals are generally in fair condition and the chance of cure is remote. When only one limb is affected, a cure may be attempted, as with a little help the animal may be got to stand. If our clients were to allow their cows a fair share of walking exercise daily, this affection of the legs would very seldom be met with.

In conclusion, it is hoped that others who have met with cases of this disease may express their views, so that we may get a clear and correct conception of its nature, and be able to diagnose it correctly, and point out a preventive if we cannot cure.

Editorial.

THE EXTINCTION OF CONTAGIOUS PLEURO-PNEUMONIA.

THERE is at length a prospect of release from the ravages of one of the most serious scourges that ever visited the bovine population of this or any other country, if the Government cares to adopt those measures which have now been proved to be completely efficacious in extinguishing it. Contagious Pleuro-pneumonia still lingers in these islands, and will continue to do so in all probability until the end of time, unless its insidious contagiousness and protracted latency are fully recognised, and the utility of inoculation as a protective measure fairly acknowledged and resorted to when necessary. The mere slaughter and isolation of disease centres for a short time, as is at present carried out, will not extinguish the scourge. This is now amply evident from the experience of these measures not only in the three kingdoms, but also in those countries on the Continent (as North Germany, Belgium, and France) where they are alone in operation; whereas in the kingdoms where slaughter of the diseased, and protective inoculation of the as yet unaffected, are compulsory, the disorder has nearly been suppressed (as in Holland), or is altogether subdued. The persistency with which the value of inoculation has been ignored in this country would be astonishing did we not know how stubbornly some people shut their eyes to the light, and close their minds to the reception of facts which are not in harmony with pre-conceived notions, or are adverse to opinions hastily promulgated and based on very imperfect knowledge.

The evidence in support of protective inoculation is now too serious to be sneered down, or made the sport of small witlings who joke about "Pleuro-pneumonia in the tail." The accumulation of facts, the result of scientific research and practical observation, given in Professor Pütz's admirable monograph,* published last year as one of Pflug's *Vorträge für Thierärzte*, cannot be dispersed by the bluster of unreasoning incredulity or the assertions of the inexperienced. Every month this accumulation has been added to, and the most recent addition to the now extensive store of literature in favour of this measure—that of our accomplished colleague, M. Dele, Government Veterinary Surgeon in Antwerp—is well worthy the perusal of those interested in the question.† But perhaps the most convincing evidence which has yet been brought forward is that furnished by Mr. Rutherford, of Edinburgh. Perhaps no city in Europe has suffered so severely from Contagious Pleuro-pneumonia since its introduction into Britain than the Scottish capital. Its dairies have been cleared out again and again, and scores of dairymen have been ruined through its ravages. Inoculation was tried there and in the neighbourhood many years ago, but it was not practised in a scientific or systematic manner, and the losses it inflicted were even more serious than the disorder itself; until at last the dairymen

* Die Lungenseuche als Gegenstand der Veterinär-Sanitätspolizei. Leipzig, 1878.
† De l'Inoculation préventive de la Pleuropneumonie. Anvers, 1879.

would have no more of it, and had to content themselves with their chance of escape or hurrying off all their stock to the slaughter-house when the contagion appeared among them. A year or two ago Mr. Rutherford arrived from Australia, where he had witnessed the wonderful results from inoculation obtained in the practice of Mr. Mitchell, F.R.C.V.S., of Melbourne. At that time the disease was rife in the Edinburgh dairies, and only after very great persuasion was he allowed to try scientific inoculation on a few cows—the dairymen not only being incredulous as to any benefit to be derived from it, but averse to it, remembering, as they did, the mortality it occasioned years ago. But with a mortality almost *nil*, and absolute protection conferred upon the cows successfully inoculated, confidence in the measure was gradually created, and now nearly three thousand have been so protected. We say *protected*, for we are assured, and the assurance rests largely upon personal inquiry among the dairymen, that not one of these inoculated cows has ever taken the disease, though exposed repeatedly to infection; and so strong is now the belief in the protective influence of the operation, that the cowkeepers whom we interrogated declared they would have no hesitation whatever in allowing any number of sick cattle to cohabit with their inoculated cows, as they were confident, from their experience, that the disease would not extend to them. Edinburgh is at present free from the scourge for the first time since 1841, and Mr. Rutherford is now conferring on the districts around the immense boon he has conferred on his native city. The mortality from inoculation is less than one per cent., and it would undoubtedly be much less were the directions to the dairymen fairly carried out. Still further testimony in favour of the operation in Edinburgh is to be found in the fact, that no inoculated cow killed in the abbatoirs has ever shown any traces of the disease when its carcase was dressed. And the strongest proof, perhaps, of any that has yet been adduced, is afforded by the handsome testimonial presented to Mr. Rutherford by the Edinburgh dairymen, at a banquet to which he has been recently invited by them, in acknowledgment of the great service he had rendered them in this instance. Perhaps no class of men in the three kingdoms is so hard-headed, shrewd, or difficult of conviction as these dairymen, and their affirmative evidence tendered in such a substantial manner speaks volumes for Mr. Rutherford's success.

It is curious that while certain authorities have done their utmost to discredit inoculation, they have never attempted to explain, if they understood, its phenomena. There can be no doubt that when properly performed, and when all due care is exercised, it is as protective as, if not more so than vaccination is of human Variola; that the morbid process set up as the result of inoculation is specific, and is not witnessed, so far as we can ascertain, in any other than the bovine species, and that the entire organism appears to be affected.

Surely it would be worthy of Government to accept Mr. Rutherford's challenge,and give him an opportunity of benefiting English cattle owners, as well as those across the border. This pitiless and continued slaughter of diseased cows, and the terrible embarrassment to agricul-

turists which the present fruitless measures produce, will soon become little short of a crime in presence of the absolute immunity and humanity which are the attributes of protective inoculation. It is for the country to put the requisite pressure on the Government—without this, affairs will, we may be sure, remain as they are. Anything that occasions trouble will never be, has never been adopted except under compulsion. It is high time we were rid of Lung Disease, now we know how to extinguish it, but the Government must be compelled to adopt the necessary measures.

THROMBOSIS OF THE POSTERIOR AORTA AND ILIAC ARTERIES.

In the extensive series of reports from district veterinary surgeons which go to make up a general and official report on the sanitary condition of domestic animals in Belgium for 1876, a copy of which has been kindly forwarded to us by Dr. Wehenkel, of the Brussels Veterinary School, compiler of the document, we find an interesting and instructive observation from Veterinary Surgeon Salembier, of Leuze, having reference to Thrombosis of the posterior aorta and iliac arteries, which we lay before our readers.

At the commencement of August, 1875, Salembier was called to attend a rather small bay mare, twelve or thirteen years old, belonging to Count Goussancourt, of Pipaix. For some time before his visit, the animal, when at exercise for a certain time, went lame on the left hind limb. In the stable, however, it was quite lively, and ate and drank well—in a word, there was nothing perceived amiss with it. When made to trot, Salembier could not detect any irregularity in its movements; but in about a quarter of an hour the mare appeared to suffer, the left hind leg became stiff and felt colder than the right. After five minutes' rest the lameness had completely disappeared; but soon after exercise was resumed it again manifested itself. This experiment, repeated several times in succession, always yielded the same result.

Salembier diagnosed a more or less complete obstruction of the iliac arteries of the affected limb, and gave an unfavourable prognosis. He nevertheless bled the mare, and prescribed large doses of nitre which were to be given for some time. In fifteen days no amelioration was observed in the animal's condition, but on the contrary, both hind limbs were now affected. An examination *per rectum* discovered the termination of the aorta to be a little more resisting to the touch than usual, though its pulsations could be distinctly felt.

The creature was turned out to graze in a paddock for another fifteen days, at the end of which time all the symptoms were considerably aggravated after somewhat rapid exercise sustained for ten to fifteen minutes. The hind legs were dragged along with difficulty; the entire body was covered with an abundant perspiration, with the exception of the hind-quarters, which were quite dry and lower in temperature than the other parts; the respiration was hurried; the face *grippé*—the nostrils dilated; and if she had not been stopped she must have fallen, as she staggered about and could scarcely preserve her equilibrium. When standing, she appeared to be in the greatest pain, and threw nearly all her weight on the front part of the body; on being left alone she lay down instantly. In a quarter of an hour she had quite recovered. All this train of symptoms only confirmed Salembier in his diagnosis and prognosis.

Professor Laho, of the Brussels Veterinary School, was consulted, and after an examination, confessed himself quite in accord with Salembier as to

the nature and gravity of the affection. Nevertheless, as the owner was desirous of keeping the mare alive and having her submitted to further treatment, it was decided to administer, alternately, potassium iodide and arsenious acid. No improvement took place, however; the disease progressed, and all the symptoms became aggravated.

Soon after the Count disposed of the mare to Baron du Sart for his pack of hounds, and towards the end of January Salembier was consulted by that nobleman with regard to this singular case, when he declared all treatment useless. Another veterinary surgeon, however, gave it as his opinion that the animal was affected with disease of the spinal cord, and had a large blister applied along the spine. This did no good, and after a fortnight the disease had advanced so far that the mare could not walk forth more an four minutes without falling.

In order to assure himself as to the cause of this morbid condition the Baron called in Salembier to make an autopsy of the animal. The calibre of the posterior aorta at its termination was found to be obliterated by a yellow and very dense fibrous clot, five to six centimetres in length. The iliac arteries, internal as well as external, were filled with clots of a less dense consistence, and colourless like that in the aorta. These clots wers separated by a constricted portion, which gave the arteries a moniliform appearance. The other organs, as well as the spinal cord, were normal. The morbid specimen was sent to the museum of the Brussels Veterinary School.

THE TRANSMISSIBILITY OF BOVINE TUBERCULOSIS.

THAT the Tuberculosis of cattle is a transmissible disease, and can be conveyed not only to animals of the same, but also to those of other species in various ways, is now an established fact, upon the recognition of which we have for many years insisted; and since we first called attention to it, some of the best pathologists in Europe have furnished additional testimony as to the readiness with which this transmission takes place, not only by inoculation or ingestion, but also, it would appear, by cohabitation of diseased with healthy animals. In the early part of this year, Colin, of Alfort, contributed a series of observations with regard to the communicability of the disorder; several German and Italian authorities have also published their experiences; and, lastly, we have the celebrated Professor Orth, of Gottingen, furnishing the results of his investigations and experiments in a recent number of Virchow's *Archiv*. All these are only confirmatory of what we have already stated, but this confirmation is not without its value. Orth's experiments once more demonstrate that the transmission of bovine Tuberculosis is possible between different species of animals, and he also points out the complete analogy—or rather, perhaps, identity—which exists between it and the Tuberculosis of man and other animals, pathologically, as he, Wagner, Schüppel, and others had already done with regard to its histology.

In his experiments to determine the possibility of transmission of the disease, Orth employed tuberculous matter from the cow, and the animals he inoculated were rabbits, because of their greater predisposition to contract Tuberculosis. He introduced as far into their mouth as possible, by means of forceps, morsels of matter the size of a small pea, which the majority of the animals readily swallowed: using raw, freshly-developed tubercle, as well as that which was undergoing caseous metamorphosis. He also employed human tubercle derived from caseous Pneumonia, and which was administered partly raw, and partly after having been boiled for ten to fifteen minutes.

Fifteen animals were fed with matter from diseased cattle, and nine of these were infected; while those to which the caseous matter from human lungs had

been given remained apparently healthy. Of the nine infected animals, four died, and the remaining five becoming extremely emaciated, were killed. On examination of the bodies nearly all the organs of the body were found involved in Tuberculosis; in all the lungs were affected, but the serous and mucous membranes, lymphatic glands, liver, spleen, kidneys, and omentum were infected in different degrees. Microscopically, it was noted that the nodules—which always marked the first stage—were destitute of vessels, and chiefly composed of large epithelial cells, sometimes also of giant cells with several nuclei, most frequently contained in an easily distinguished reticulum. At the periphery of these nodules there were small lymphoid cells, while in the centre was the product of the degenerative metamorphosis of cells, as in caseous degeneration of tubercle in man. Great stress is laid upon the presence of giant cells, seeing that Friedlander depended on their absence to prove that the affection produced by inoculation was only Pyæmia, while Semmer and Metzquer asserted it was merely metastatic embolism.

From his experiments and investigations, Orth arrives at the following conclusions:—

1. The disease known as *Perlsucht* (the vulgar German name for Tuberculosis) is identical with the Tuberculosis of man, seeing that the affection produced in the rabbits has more resemblance to the human disorder than that of the cows from which the infecting material was procured, while the serous membranes were not affected in so marked a manner as in the cow—calcareous incrustation being nearly always absent, and replaced by caseous degeneration.

2. Tuberculosis of the cow is transmissible to other species, even through the digestive organs. Colin and one or two others have attributed infection to inspiration of tuberculous matter into the lungs; but the precautions taken in these experiments, as well as the presence of disseminated grey pulmonary tubercles alongside ulcerations and caseous centres, dispel that notion.

3. The virus of Tuberculosis penetrates by the intact mucous membranes, resists the action of the digestive fluids, and constitutes a most dangerous poison. No parasite of any kind could be discovered in the tuberculous matter.

The possibility of the transmission of this affection to animals being proved, Orth insists that its transmission to man is possible. He, however, admits that the transmission by flesh is only as yet a hypothesis, and that new experiments are necessary to solve this grave and important question.

THE NON-VIRULENCE OF MILK FROM RABID ANIMALS.

In the Italian *Giornale di Medicina Veterinaria Practica* for January last, Veterinary Surgeon Giamperi, of Montegrimano, Italy, records the following interesting case. On September 24th a peasant named Gentili turned out a sow, four years old, and about to litter, to pasture, when a stray dog, on passing, bit it deeply on the nose and lip. The same dog soon after attacked two sows of a drove belonging to a man named Begni, but being pursued it was killed. Acting on the advice of the veterinary surgeon, Begni confined his two sows and watched them. In about twenty days after the injury they both became dull, grunted and groaned incessantly, at intervals munched their litter, refused all food, and great quantities of saliva flowed from their mouth. These symptoms increased, until, on the twenty-fourth day—the fourth of the disease—they could not be approached, the presence of people exciting them to fury. In two more days paralysis appeared, and death took place on the evening of the twenty-sixth day after the bites were inflicted.

The sow belonging to Gentili, which was first wounded, brought forth eleven young during the night of September 24th-25th. She was bitten on the 24th. Four of the progeny were killed by the mother overlaying them. The remaining seven were well suckled and grew rapidly. Hearing of the fate of Giamperi's swine, and the probability of his own sow becoming affected with Rabies, the superstitious man got the Curé of the parish to bless the animal in order to avert the malady. A useless procedure, for on the fortieth day after the bite, symptoms of the disorder appeared; on the forty-fifth day—the fifth of the disease—vomiting and paralysis set in, and the creature was then killed. Singular to remark, during the five days' illness the sow exhibited her usual affection for her young, and never attempted to bite them. The latter, after the death of their mother, continued well until they were six months old, when an outbreak of Anthracic Angina carried off six of them. The seventh was in good health at a year old. This account affords additional confirmation of what has been already made known with regard to the delay in the evolution of Rabies in pregnant and suckling animals, as well as the innocuousness of milk derived from rabid creatures—at least when ingested.

CONTAGIOUS INFLAMMATION OF THE UDDER IN CATTLE AND OTHER ANIMALS.

In "Veterinary Obstetrics" (p. 694) attention is drawn to a contagious form of Mammitis described by Professor Franck, of Munich, and Rivolta, of Pisa, as occurring in the cow and sheep; and in the VETERINARY JOURNAL for November, 1878 (p. 335), a translation is given of an interesting report furnished by Professor Dieckerhoff, of Berlin, on an outbreak of infectious Mammitis in Holstein. We regret that we have until now overlooked another excellent account of this contagious mammary disease of cows (*Eine ansteckende Euterkrankheit bei Kuhen*) by Professor Zürn, of Leipzic, which appeared in the *Deutsche Zeitschrift für Thiermedicin* for 1877 (p. 381), which is a complement to that of Dieckerhoff. From the description of the symptoms, at first there only appeared to be a slight elevation of temperature in the affected gland; mulsion did not cause pain, but the fluid obtained was a kind of citron-tinted serum containing clots of pus-like matter, yellow or white in colour, some of them having a conical form. At times, however, there were signs of general uneasiness or disturbance, and particularly much stiffness of all the limbs. In other cases the flow of milk suddenly ceased without any symptoms of disease. A microscopical examination of the milk—which had an acid reaction—revealed the presence of enormous quantities of *Micrococci*, *Mycothrix* filaments, and similar fungi spores of *Mucor mucedo*, and cells resembling those of beer yeast—some or all of which Zürn thinks may have been active agents in developing and spreading the disease, which was infectious not only among the cows, but affected also ewes and swine. The young of the cows, ewes, and sows which suffered from the disease died through sucking the milk.

STATISTICAL ITEMS RELATING TO ARMY HORSES IN ENGLAND AND FRANCE.

In the following pages will be found a few statistics of army horses, extracted from recent official sources, English and French. They are suggestive in many ways, and, it is hoped, will not prove insuperably dry reading.

Taking English army horses first, we learn from the "General Annual Return of the British Army" for 1877—the latest yet issued from the War Office

—that the number of army horses (exclusive of horses the private property of officers) serving in the United Kingdom from 1861 to 1878, varied from eleven thousand to nearly sixteen thousand. Besides these, there have always been ten or eleven thousand British cavalry and horse and field artillery serving and horsed in India; but as the data relating to these furnished by the returns are very meagre, they have been omitted altogether in the present paper.

Of army horses, as aforesaid, there were serving in the United Kingdom on 1st January, 1877, a total of 15,143, viz. :—

Household Cavalry	845
Cavalry of the Line	6,843
Royal Horse Artillery	1,794
Royal Artillery	4,169
Royal Engineers	416
Army Service Corps	1,076

About one-third of the whole number (5,446) were five to eight years of age; another third (5,529) were nearly nine to twelve years old; while the rest consisted of animals (2,024) under five years, and (2,290) thirteen years and over, in nearly equal proportion.

The proportion of *old* horses, *i.e.*, thirteen years and over, was largest in the Household Cavalry and Army Service Corps, and smallest in the Royal Artillery.

Comparing the deaths shown in the returns as having occurred among horses serving in the United Kingdom during the year with the number of horses effective on 1st January, 1877, we get the following :—

DEATH-RATES. HORSES. UNITED KINGDOM, 1877.

Cavalry of the Line...	19 per 1,000
Royal Horse Artillery	18 ,,
Royal Engineers	18* ,,
Army Service Corps	17 ,,
Royal Artillery	12 ,,
Household Cavalry	11 ,,

The death-rate for the whole British establishment was a little over 16 per 1,000, which was lower than in any year of the period included in the returns, viz., 1861-1878. The death-rate was highest in 1867, when it was 24·5 per 1,000, and in 1872, when it was 24 per 1,000.†

No information is furnished as to the causes of death. But if the numbers of horses struck off the rolls as non-effective from all causes, deaths included, be taken, the corps stand in different order.

Proportion of horses become non-effective from all causes, including deaths (Annual Decrease), United Kingdom, 1877 :—

Royal Horse Artillery	104 per 1,000
Household Cavalry	103 ,,
Cavalry of the Line	98 ,,
Army Service Corps	93 ,,
Royal Artillery	83‡ ,,
Royal Engineers	74 ,,

* The number of horses in the Royal Engineers is too small to admit of a strictly fair comparison with the other arms. Although the death-rate was high, there were only eight deaths in all.

† In his work, *Die Remontirung der Preussischen Armée*, Stud-Director Mentzel states that the average death-rate of Prussian army horses in quarters during the twenty-five years preceding the Franco-German war was 26 per 1,000.

‡ The "Annual Decrease" of the Royal Artillery appears larger in the "General Annual Return," as 292 horses transferred to the Royal Horse Artillery are included in the total of horses struck off the rolls.

The proportion of horses "cast" was largest in the Household Cavalry and the Royal Horse Artillery, and smallest in the Royal Artillery. The reasons of casting are not specified.

Turning now to the French returns, of which a summary is given in *L'Armée Militaire*, we find that those for the twelve months extending from 1st July, 1877, to 30th June, 1878, correspond nearest in point of date with the English returns just quoted.

The French Budget for 1878 provided for 123,000 horses, including 13,000 for the Gendarmerie. About 16,000 out of the total number were stationed in Algeria. Sixteen light cavalry regiments were mounted on arabs; the remainder on other horses, which are now recruited from the seventeen remount depôts in France. The mortality is shown as below :—

DEATH-RATES. FRANCE AND ALGERIA, 1877-78.

Cuirassiers	41 per 1,000
Train	39 ,,
Artillery and Artillery Train	27 ,,
Dragoons	26 ,,
Light Cavalry (French horses)	26 ,,
,, (arabs)	25 ,,
Schools	17 ,,

Three regiments of Spahis, mounted on a system of their own, are omitted from the above calculations. There appears to be nothing in the local distribution of the different corps to account for differences in the death-rates. The death-rate for the whole army was 30 per 1,000. That of the horses serving in Algeria was also 30 per 1,000 exactly. Of the total deaths as above, 22·7 per cent. are referred to Glanders and Farcy, 20·4 per cent. to Pneumonia, and 15·6 per cent. to intestinal affections. Arranged according to the proportion of horses struck off their rolls, the corps appear as below. Proportion of horses struck off the rolls (*réformes*) from all causes, deaths included :—

FRANCE AND ALGERIA, 1877-78.

Light Cavalry (on arabs)	118 per 1,000
Train	76 ,,
Cuirassiers	67 ,,
Light Cavalry (French horses)	58 ,,
Artillery and Artillery Train	53 ,,
Schools	39 ,,

The proportion thus struck off the rolls was 60 per 1,000 for the whole army for the year, and one-third higher, or about 100 per 1,000, for the horses stationed in Algeria.

The numbers of horses cast are not given, but the principal reasons of casting are shown as under :—

Worn out (*usure des membres*)... ...	50·5 per cent of total number cast.
Incurable Lameness	20·5 per cent. ,,
Growth	5·9 per cent. ,,

Here our "items" end; but a parting remark may perhaps be permissible on the desirability of such statistics.

The number of army horses stationed in the United Kingdom during the last twenty years has ranged from eleven to sixteen thousand. These animals are continuously subject to the best veterinary supervision; they are bought and kept and worked under conditions sufficiently identical to allow fair and reliable averages to be struck from their statistics. Fuller information concerning their sick and death rates, and the duration of their working powers, specifying, as far as possible, the sources whence the animals were obtained and the causes of disability or death, could not fail to prove interest-

ing and valuable, not only to the mounted branches of the service and to the veterinary profession, but to agriculturists and other large employers of horses. The same argument applies with equal or greater force to India and other foreign stations.

Nor must it be forgotten that—let red-tapists say what they will—the freest ventilation of all questions affecting the supply and managment of army cattle of all descriptions, in quarters and in the field—not at odd times when the subject crops up, but year after year—would prove the best guarantee against unwise economies and the recurrence of expensive and dangerous *fiascos*, like the "transport difficulty" at the outset of the recent operations in Afghanistan. H. M. C.

Reviews.

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STRANGEWAY'S VETERINARY ANATOMY. Second Edition. Revised and edited by I. Vaughan, Edinburgh. 1879.

VADE MECUM OF EQUINE ANATOMY. By A. Liautard, M.D., New York. 1879.

Chauveau's "Anatomy," so well known to veterinarians in this country and America by the English edition published a few years ago, is universally acknowledged to be the best work on the subject in any language, whether it be considered as a dissection manual, text-book, or book of reference. The fact that it has already passed through two editions, and that the third has just been issued—the book being in use in nearly all the Continental schools—is in itself sufficient evidence of its great value. The new edition has been much improved, and there are important additions, both in matter and illustrations; so that the work well represents the present advanced position of veterinary anatomy in the French and Belgian schools. The additions in the way of letter-press and wood-cuts have made the volume more bulky, perhaps, than its predecessor; but then we must remember than anatomy is thoroughly taught in these schools, and nothing less than a perfect knowledge of the subject would pass muster. Whether we have regard to the descriptive portion, the wood-cuts—many of which are coloured, or the minor details, we are compelled to confess that no better student or practitioner's book on the anatomy of the domestic animals exists than this of Chauveau. We assert this with a full acquaintance with the other Continental text-books, some of which—as Franck's (*Handbuch der Anatomie der Hausthiere*), Gurlt's (*Handbuch der Vergleichenden Anatomie der Haus-saugthiere*), Leyh's (*Handbuch der Anatomie der Hausthiere*, and the French translation by Zundel), and those of the Italian schools —are most excellent and complete. Arloing, to whom Chauveau appears to have entrusted the preparation of this new edition, has evidently spared no pains to prove that the confidence reposed in him has not been misplaced. No better book on the subject—whether for the

student or the busy practitioner—has ever appeared, and its production in every way reflects credit on French veterinary science.

"Strangeway's Veterinary Anatomy" was, though mainly a kind of abbreviation of Chauveau's, notoriously incomplete and incorrect, and we are glad to notice that Professor Vaughan has done his best to remedy these defects in the second edition, which the work has now reached. It is difficult to say in what condition veterinary anatomy now exists in England. The second edition of Strangeway's treatise would lead us to believe either that the students have not the time or the capability of acquiring a thorough knowledge of anatomy, or that a very superficial acquaintance with it is all that is necessary. It is much to be feared (and our own personal experience still further strengthens the apprehension) that the extremely important subject of the anatomy of the domestic animals is not yet looked upon as one with which a fairly perfect acquaintance is needed on behalf of the student. English veterinary instruction, weak in many points, has never been anything like strong in anatomy. The new edition of the book now before us is a great improvement upon the first, and yet compared with the text-books in use abroad, it looks as if it contained only the merest rudiments of this very essential portion of the veterinary surgeon's professional knowledge. This and the relatively very high price are, however, the only faults we have to find with the book. Leyh's drawings illustrate it, but they are transferred to the letter-press, instead of appearing in the objectionable photo-lithographic plates as before. Additional cuts have been borrowed from the English edition of Chauveau's "Anatomy," while some of Mégnin's drawings furnish plates to the volume, which is well got up.

Liautard's "Vade Mecum of Equine Anatomy" is avowedly written for the use of advanced students and veterinary surgeons, and is an abridged work in which they may, without loss of time, review the descriptive anatomy of a region. The book treats, in fact, of the regional anatomy of the horse, the arrangement of the subject being adapted to the author's mode of tuition—the text of Fleming's translation of Chauveau being closely followed. Concision and condensation predominate, so that within less than two hundred pages we have an outline of the regional anatomy of the horse which is deemed sufficient to save students' time when reviewing their studies, and serve to refresh the memory of the busy practitioner who is about to operate. We consider that the "Vade Mecum" will fulfil this intention, and therefore recommend it. It is remarkably free from errors, so far as we have been able to ascertain, and is most convenient in form and size. The dedication is a compliment from American to British veterinary surgeons, and we gratefully acknowledge it, proving, as it does, that the Atlantic is no barrier to reciprocity in science or scientific appreciation.

Proceedings of Veterinary Medical Societies, etc.

VETERINARY MEDICAL ASSOCIATION.

Royal Veterinary College, 44th Session, 1879-80.

The first general meeting of the members of the Veterinary Medical Association was held in the lecture theatre of the Royal Veterinary College, on Tuesday, 14th October, 1879, at 6.30 p.m. The President, Professor Pritchard, occupied the chair.

A general invitation for this meeting had been issued by order of the President to all students at the Royal Veterinary College. Fifty-three visitorsr esponded to this. Twenty-three members, the President, and the Secretary also attended.

The minutes of the last meeting of the forty-third session were read and received. The awards of the session 1878-79, were then announced and distributed. Messrs. F. C. Gooch, H. Redford, T. J. Rippon, A. S. Auger, E. H. Scott, E. E. Bennett, E. C. Cockram, were then proposed as fit persons to become members of the Association.

The President announced the subjects for prize competitions for the coming session. He then officially intimated the nature of the agreement between the Council of the Association and the Governors of the College, whereby the library is now available for use by *all* students at the Royal Veterinary College.

The Secretary then read his report of the proceedings of the Association during the forty-third session, as sanctioned by the Council :—

Mr. President and Gentlemen,—The objects of the Veterinary Medical Association are—

1. Meeting together of persons connected with veterinary science for discussion of proposed subjects.
2. Awarding prizes to student members for superior attainments.
3. Formation of a library of reference and circulation.

I believe we are in a position to congratulate ourselves that we have been thoroughly successful in carrying out these objects during the forty-third session, the proceedings of which I have now to bring before you. In all there have been twenty-two general meetings of the Association during the session 1878-79, at each of which there has been an average attendance of about thirty "persons connected with veterinary science," members of the veterinary profession, students at the College, and visitors, professional and non-professional. The discussions have been varied, lively, and in many cases very original, and the "drawing out" of scientific ideas, the energy of argument, and tact of offence and defence displayed in these debates must have been highly beneficial to all of us who have attended the meetings. Such training is of great value to a veterinary surgeon. In few professions more than ours do men require to look more frequently under the surface to detect deceit and the cunning malevolence of ignorance; and the juvenility of our profession necessitates that members of it be the better prepared to withstand such slights as members of older professions endeavour to inflict on them. The votaries of human medicine, the elder brothers of our science, are beginning to see that we are no longer in the confiding stage of childhood, but are prepared to question her dictates, to look into matters for ourselves; they begin to respect and sympathise with us accordingly. The lawyer pompously cross-questions his veterinary witness, browbeats, bullies, and pushes him to prevarication, but concludes "that man is not by any means a fool." Dignitaries of the church begin to learn that our opinion is to be trusted, and possibility of referring to a veterinary

examination of a horse for soundness has rendered obsolete the saying, "Never buy a horse from a bishop." Physicians, lawyers, and clergymen thus feel that this new profession is beginning to assert with force its title to a place among the "learned bodies." The military man, though occasionally an old cavalry officer, dabbles in "horse medicine," recognises the improved health and stamina of his troop horses resulting from strict veterinary supervision. As we sow so shall we reap! Not a little of the improved aspect of the profession is due to the training given by students' societies to the coming race of practitioners. Among such societies ours is the oldest one in the veterinary profession, has the greatest influence, and can boast of having included in its ranks men whose present professional position vouches at once for their intrinsic worth, and the success of the training to which they have been subjected. In the supervision of our register of members, in which I, as Secretary, have been recently engaged, I have noted that, save where the "grim tyrant, Death," has interfered, a successful career as a constituent of this Society has been paralleled subsequently by progress in the profession in which we are all interested; nor is it in one only of the numerous types of the veterinary practitioner that we note this, we see it at every turn, whether in the wide range of country practice, in the sharp business of cities, with our armies in the field, or in the professorial chair, our constituents come to the front. Long may it be so; we have as yet no cause to fear a decline in the progress of our Association! When the Association was founded it was *the* Veterinary Society. Practitioners and students alike took part in its debates, and to each set of members it awarded prizes; but professional progress necessitates division of labour, and practitioners' societies arose throughout the country, when, in the struggle for existence, the Veterinary Medical Association assumed its normal position in the veterinary system of this country as the students' society of its largest college. Its certified members, passing into practice in various parts of the country, have originated local societies, but many of them retain their feelings of respect for the old Society unaltered. We owe to them many an instructive specimen and many a kind hint from their stores of experience, and from their sympathy we derive not a little encouragement in our labours. Some of them give us their personal encouragement by attending at our meetings, and others by performing with regularity and energy the duties of members of Council. To these latter gentlemen we are indebted for some sterling work during the past session—work which will give much increased stability to the Association. By frequent meetings they have revised the rules and regulations, a work, I can assure you, by no means as easy as it looks, and they have negociated a measure which will much increase the privileges of members. Thus henceforth you will have the luxury of a reading-room, where the library of the Association may be fully utilised for study and reference, and where the different periodicals taken in by the Association will be placed for your advantage. The imperfect use made of these periodicals during the past session indicates that further facilities for consulting them were necessary. The Council has decided that the following be added to those already taken in:—

Journal of Anatomy and Physiology, Transactions of the Pathological Society, Students' Journal.

The full list will be found on our notice board. The books of the library are now fully catalogued, and reference to the list will show that they number about 1,450 volumes. With such at your disposal you will little need to consult other sources, and will have no excuse for imperfectly "working up" the bibliography of your essay-subjects. Recently we had reason to regret the absence of the newest professional works, but this is now corrected, as reference to the catalogue will show; none of us will question that the funds of

the Association are thus well spent. Not the least onerous work of the Council is the adjudication of awards such as are announced on the prize list. The "Spooner Prize Examination" was conducted on the evening of the 24th March. Questions in anatomy, chemistry, and botany were given for the written examination. The answering of the botany questions was by no means satisfactory. In future the Council hopes that the application of this important science to veterinary medicine and surgery and hygiene will not be almost totally neglected by students. The candidates, of whom four presented themselves, were examined *vivâ voce* in surgery and medicine. The decision of the examiners was—

Gold Medal—Mr. William Frank Smith, of Downham Market.

Certificate of Merit—Mr. William Alston Edgar, of Dartford.

The answering was highly creditable; as last year, the marks for the *vivâ voce* were most satisfactory.

A well-earned silver medal was awarded to Mr. Nicholson Almond for his preparations "illustrating the manner in which the cranial nerves emerge from the cranium." The excellence of this gentleman's specimens demanded an unhesitating favourable decision, though no others were sent in. These are on the table for your inspection. One essay on "Eczema Epizootica" was placed in the hands of the Secretary. The members of Council examined this, and concluded that it is worthy of the Association silver medal. On opening the sealed envelope which accompanied it, the author was found to be Mr. William Frank Smith. The Council, by a resolution of February 13th, 1879, decided that the rules having been so recently modified, the date before which the preparations and essays in competition for the silver medals must be sent in be the last day in May, as heretofore, and not the last day in March, as it will be in future according to the modified rules. In all eleven essays were read at the general meetings during the past session. Mr. Dixson, M.R.C.V.S., late Assistant Demonstrator of Anatomy at the College, favoured us with a paper on "Distemper as affecting the Dog." The discussion on this occupied two nights of meeting; and it, with a remarkable specimen forwarded to the Association by Captain Russell, of Grantham, of "Diffused Encephaloid," and a case of "Ventral Uterine Hernia of the Bitch," drew our attention to Canine Pathology. Mr. W. F. Smith's paper on "Breeds and Breeding of Cart-Horses," and Mr. W. Beach's essay on "British Sheep and the Management of a Flock on a Light Land Farm," are valuable contributions to that science which is termed Zootechny. They illustrate the effects of artificial selection. Mr. Beach, in the elaboration of his subject, prepared specimens illustrating variations of the skull in the principal British breeds; these he has presented to the Association, and for them he has received the thanks of the Council. A valuable series of preparations of the "Petrous Temporal Bones," from Mr. Nicholson Almond, was similarly acknowledged, and to that gentleman we are indebted for our only paper on pure pathology —his essay on "Inflammation." The theories therein placed under our notice should be well known to all veterinary surgeons as the most recent opinions of the leading authorities on the subject. His theory of treatment may be seen in the *Veterinarian*, May, 1879. Mr. Blakeway read a paper on "Specific Ophthalmia as affecting the Horse," and this, with a specimen of disease of the eye of the cow, by Mr. Golledge, are our contributions to Ophthalmic Surgery. Operative Surgery received attention from us in the following papers:—Mr. Geo. Gartside Mayor on "Herniæ;" Mr. Steel on "Castration." I may be allowed to allude to the latter as having directed the attention of the members to the prominent position which the subject of "Cryptorchidism" occupies in the mind of the professional public at the present time; and very opportunely Messrs. Slipper and Shipley brought forward the case of "Post-mortem Examination of a Rig" which may be read in the

April number of the *Veterinarian*. Mr. Gregory drew our attention to "Tetanus," and Mr. Bainbridge to the always interesting subject, "Navicular-thritis," which was illustrated with specimens by Messrs. Talbott and Blakeway, the latter giving us a case of "Navicular Disease in the Hind Feet." Mr. Golledge kept us well occupied in learning and discussing his views on "Foot Rot," reminding us that the sheep is by no means unfrequently our patient. While Mr. Titus Littler sustained his hereditary reputation for Helminthology by his paper on "Equine Parasitism." The same branch of science was brought under our notice by Mr. Lepper's case of "Strongylus armatus in the Kidneys of a Colt." Generation and Development found notice in our examination of specimens of "Cartilaginous Cervix Uteri of a Heifer," and the "Generative Organs of an Hermaphrodite." The following other specimens were examined :—

"Perforation of Soft Palate by Overgrown Molar" (President); "Dilata-of the Œsophagus" (President); "Tuberculosis Hepatitis" (Mr. Golledge); "Cystic Disease" (Mr. Blakeway); "Atrophy of Posterior Lobe of Right Cerebral Hemisphere, with Communication of a Case of Serous Cyst of the Brain" (Mr. T. Fletcher); "Fracture of the Metatarsus" (Mr. W. F. Smith); "Enteric Disease" (Mr. Cattrall); "Rupture of Tarsal Ligaments" (Messrs. Davy and Steel); "Complicated Ringbone" (Mr. Steel); "Pericarditis" (Mr. Steel).

Careful examination of the above-mentioned essays has been made by a Committee of Members of the Council. Their report is as follows :—

Honorary Fellowship (conveying "Special Thanks of the Association") —Messrs. Beach, Dixon, Mayor, W. F. Smith, Littler, Golledge, and Bainbridge.

Association's General Meetings Prize—Mr. Nicholson Almond.

It was decided that the latter prize assume the form of a case of surgical instruments. I have no doubt you will sanction the award, with your sincere congratulations to Mr. Almond on his success.

The number of visitors at our general meetings has been quite up to the average, and we owe to many of them a debt of gratitude for valuable opinions expressed during the discussions. We enrolled twenty-eight new members, an increase of six on the preceding session. Three passed their Diploma Examination before the Royal College of Veterinary Surgeons, and obtained the Certificate of Membership.

At our first meeting on the 15th October, 1878, the following gentlemen were elected Student Vice-Presidents for session 1878-79:—Messrs. Donald Gregory, Nicholson Almond, Geo. Gartside Mayor, T. A. Huband, T. W. Lepper, F. Gowland Rugg.

We owe thanks to these gentlemen for the able manner in which they have performed the duties of their office.

The officers of the Association of the session 1877-78 were re-elected to their respective offices. The President has occupied the chair at many general meetings, and at all meetings of Council.

The Secretary has endeavoured to give us accurately and fully as possible the minutes of the Council and general meetings of the Association. He has also drawn up for the Council the report of the Spooner Examination Committee, and the revised register of members, etc. In performance of his duties as Librarian he has revised the catalogue of books in the library, and drawn up the library report.

I believe, gentlemen, that we may conclude our review of the session 1878-79 with the assurance that the Association is in every way vigorous and flourishing, and that we retain no business to retard our advance during the forty-fourth session, 1879-80.

Certified Members, 1878-79.

	George Crane Hunting . 1	(H. F. and F.)	Titus Littler . 7
	Samuel Oxton Langley . . 2		William Robt. Emery . . 8
	Alfred Charles Turner . . 3	(Sp. Cert. M.)	William Alston Edgar . . . 9
(H. F. and F.)	Joseph Bainbridge . . 4	(H. F. and F.)	Charles Hedworth Golledge . . . 10
(Ess. Sil. Med.) (H. F. and F.) (Sp. Gld. Mdl.)	William Frank Smith . . 5		James Ingham 11
			Ernest Edwin Batt . . . 12
(F.)	James Blakeway . . . 6		Fk. John Short 13

A vote was unanimously passed that this report be received.

The following gentlemen were then elected "Student Vice-Presidents" for the coming session :—Messrs. Slipper, Mayor, Lepper, Villar, Gregory, and Talbott.

A request was then made for the names of gentlemen willing to produce papers for discussion during the coming session ; but some difficulty existing in respect to a paper for the next night of meeting, the President undertook to engage the attention of the members on that occasion.

Mr. A. G. BANHAM, M.R.C.V.S. (Spooner Gold Medallist), then read a paper introductory to the study of disease ; and discussion of this was adjourned until the next night of meeting, as proposed by Mr. Huband, seconded by Mr. Beach.

The meeting then terminated.

JOHN HY. STEEL,
Secretary.

LIST OF PRIZES AND AWARDS PRESENTED AT THE COMMENCEMENT OF THE WINTER SESSION, 1879-80.

Spooner Prize Examination.

Gold Medal—Mr. William Frank Smith.
Certificate of Merit—Mr. William Alston Edgar.

Association Silver Medals.

For Prize Essay—Mr. William Frank Smith.
For Prize Anatomical Specimens—Mr. Nicholson Almond.

PRIZES, ETC., FOR ESSAYS READ AT THE GENERAL MEETINGS OF THE ASSOCIATION.—SESSION 1878-79.

For the Best of all the Essays read, Five Guinea Prize—Mr. Nicholson Almond, for his essay on "Visceral Inflammations."

Honorary Fellowship Certificates—Messrs. Wm. Beach, for his essay on "British Breeds of Sheep, and the Managment of a Stock on a Light Land Farm ;" E. Lionel Dixson, M.R.C.V.S., "Distemper of the Dog ; G. Gartside Mayor, "Herniæ ;" W. F. Smith, "Breeds and Management of Cart-Horses ;" Titus Littler, "Equine Parisitism ;" C. H. Golledge, for his essay on "Foot-rot ;" J. Bainbridge, "Navicular Arthritis." (Placed in the order of the Committee report.)

The following gentlemen have received

Fellowship Certificates—Messrs. Gregory, for his essay on "Tetanus ' Blakeway, "Ophthalmia."

The following gentlemen have received the thanks of the Council of the Association for presentations:—Messrs. Nicholson Almond; W. H. Beach.

The following gentlemen have received the thanks of the members for specimens forwarded for inspection at the general meetings:—The President; Captain Russell, of Grantham, M.R.C.V.S.; Messrs. C. Hedworth Golledge; Slipper and Shipley, of Yarmouth, M.R.C.V.S.; Harry Talbott; Blakeway; Lepper; Penhale; Hunting; T. Fletcher; W. F. Smith; Cattrall, M.R.C.V.S.; E. M. Davy, M.R.C.V.S.; W. Almond; J. H. Steel, M.R.C.V.S.

JOHN HY. STEEL, *Secretary.*

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE usual quarterly meeting of the above Association was held at the Albion Hotel, Manchester, on October 15th, 1879. W. Dacre, Esq., President, in the chair. The following members and friends were present—Lieut.-Gen. Sir F. Fitzwygram, Bart.; Professor Williams; Mr. Geo. Fleming, 2nd Life-Guards; Lieut.-Col. Lockwood; W. Pallin, 20th Hussars; J. Lambert, 17th Lancers; S. M. Wilson, 12th Lancers; Messrs P. Taylor, T. Greaves, Tom Taylor, W. A. Taylor, John Lawson, Alex. Lawson, M. J. Roberts, T. Hopkin E. Faulkner, J. B. Wolstenholme, G. Humphries, J. Paton, W. Holland, Mr. Green, and Mr. Snowcroft, of Manchester; H. Fergusson and Mr. Harrison, Warrington; W. G. Schofield, Pontefract; Messrs. W. and J. Leather, J. W. Moore, and C. W. Elam, of Liverpool; Messrs. Cartwright and Hill, Wolverhampton; Messrs. J. A. Polding and T. Briggs, of Bury; J. B. Taylor, Ashton; Messrs. Bunnell and Hart, of Oldham; J. Howell, Rochdale; W. Woods, Wigan; J. Brooks, Pilkington; A. Darwell, Northwich; S. Lambert and Sam. Greaves, of Thetford; J. Cuthbert, Leeds; C. Challinor, Pendlebury; J. O. Martin, Altrincham; A. Prescott, Pendleton; J. C. Atkinson, Stockport; R. Roberts, Kendal; W. Whittle, Worsley; H. Thompson, Aspatria; W. Broughton, Leeds; J. B. Unsworth, Market Drayton; W. Bromley, Lancaster; James Storrar, Chester; P. Walker, Bradford; J. Litt, of Bolton; M. E. Naylor, Wakefield; Dr. Renshaw, Altrincham; Dr. Owen, Manchester, etc., and the Secretary.

Telegrams and letters of excuse were received from Professors Gamgee (Owen's College), Simonds, Pritchard, Walley; Messrs. M. J. Harpley, T. A. Dollar, J. Welsby, J. Marshall, P. Walker, H. Beard, D. Hutcheon, T. S. Faulkner, A. Brooks, W. A. Cartwright, W. Johnson, G. Morgan, R. Reynolds, S. L. Buckley, A. L. Gibson, S. F. Fallding, etc., etc., etc.

The minutes of the last meeting were duly read and confirmed, after which Mr. T. Taylor proposed for election as member of the Association, Mr. George Humphries, of Manchester; seconded by T. S. Locke and carried. Mr. E. Faulkner proposed Mr. W. Holland, of Manchester; seconded by Mr. Whittle and carried. Mr. W. Leather proposed Mr. J. Leather, Senior, of Liverpool; seconded by Mr. Jas. Paton and carried. Mr. S. Locke proposed Mr. H. T. Hodgkinson, of Rochdale; seconded by Mr. T. Taylor and carried.

Mr. CHALLINOR nominated for membership Mr. Litt, of Bolton.

Mr. BROMLEY nominated for membership Mr. R. Roberts, of Kendal.

Mr. WM. WHITTLE then begged leave to nominate as Honorary Associates of the Association, Lieut.-Gen. Sir F. Fitzwygram, Bart., Professor Williams, Geo. Fleming, Peter Taylor, and Thos. Greaves.

Mr. T. TAYLOR said he had received a letter from Dr. A. Gamgee, of Owen's College, Manchester, in which he had kindly promised to read before this Association (during the winter) two papers upon the "Physiology of Digestion," with illustrations. This notice was received with great satisfaction by all present, and the Secretary was deputed to write Dr. A. Gamgee thanking him for his kind offer.

Mr. STORRAR, of Chester, then exhibited a specimen of skin disease in a cow, with photograph of the animal. Mr. PALLIN brought forward a specimen of disease of the intestine. The subject was a turf mare ; she had had repeated attacks of Colic since July, 1877 ; but in September last she died after one of them. Upon making a *post-mortem* examination there was found a large sac of bowel at the commencement of the floating colon, which was impacted with food. Professor WILLIAMS gave it as his opinion that the intestinal wall at this particular part had become paralysed, and in consequence could not act upon its contents.

Mr. PALLIN also exhibited an extraordinary specimen of rupture of muscles of the neck and dislocation, the dentata being twisted completely from the atlas ; he also showed a drawing and photo of the position in which the animal was found, dead. It had placed its head over a top bar at the box door, and firmly laid hold of the bottom bar with its teeth and become firmly fixed. Death must have been almost instantaneous.

Mr. GEORGE FLEMING then read a lengthy and instructive paper upon the "Responsibility of the Veterinary Surgeon,"* which was listened to with great interest by all present. A long discussion followed, in which a good many members and friends took part.

Mr. GREAVES said : Being the member who proposed that Mr. Fleming should be requested to bring before us this subject, I think it is only right that I should express my best thanks to him, and also offer him the best thanks of the Lancashire Veterinary Medical Association for having complied so readily and so kindly with our wishes ; and allow me to say that the manner in which he has placed the matter before us of the "Responsibility of the Veterinary Surgeon" reflects the highest possible credit on him. This subject has assumed a very serious aspect of late years, and it behoves us to carefully consider it, and if it be possible to place ourselves in a protected position. At this moment one of our members is being sued for £173 loss on a horse he examined. I have been in practice nearly half a century, and during that time have been almost daily engaged in the performance of operations, and in the examination of horses as to soundness. Up to the present time, I have not once been asked to make good any loss that may have been incurred by a purchase having been made on the faith of the soundness of my opinion. I do not for one moment presume to say that my opinion has been right in every instance, nor that I may not be held responsible to-morrow for some loss or other ; but what I wish to say is this, that I can conceive of no greater hardship or injustice to a veterinary surgeon than after he has made a careful, deliberate, and sincere examination, having exercised the best abilities he possesses, and given the opinion he has formed honestly, that he should be held responsible for any loss that may ensue on the purchase of said horse when the assumed cause of unsoundness is one of a doubtful or conjectural nature.

The best way that occurs to me to protect ourselves is this, let us always do our duty with the greatest possible care, whether it be an examination or an operation, and in our written certificate of soundness or unsoundness, as the case may be, we must clearly set forth "that we give this opinion in the full belief that it is true, but be it hereby distinctly understood that we do not hold ourselves in any way pecuniarily responsible for any ill results or losses that may take place." This subject has at various periods of my life caused me much study and earnest attention. I find in 1868 I read a paper before the Liverpool Veterinary Medical Association upon it—I took the opinion of counsel upon it at the time—which will be found reported at page 256 and following pages in the *Veterinarian* for that year ; I strongly advised every veterinary surgeon to have printed on his certificate the following words :—

* Published in the November Journal.

"This opinion is given to the best of my knowledge and belief, but I do not hold myself pecuniarily responsible for such opinion or the consequences of such opinion." I respectfully throw out this suggestion for the consideration or for the adoption of my professional brethren.

Sir F. FITZWYGRAM remarked that he quite agreed with all Mr. Fleming had said about the responsibility of the veterinary surgeon, but he was inclined to place the responsibility upon different, and perhaps upon somewhat higher grounds than that on which Mr. Fleming had placed it. It rests chiefly on account of the uncertain nature of the matter in which he is called upon to judge. "I will explain myself in this way: in the value of a house, it is the same to-morrow as it is to-day. If an expert gives an opinion, other people give it under exactly the same circumstances, and if he has given an erroneous judgment there are the means to rectify it. The veterinary surgeon gives his opinion upon moving matter, the value moves about from day to day, it may be sound to-day and unsound to-morrow. I am inclined to place the responsibility chiefly upon the ground that the matter in which he is called upon to judge is one upon which there is very great doubt. The veterinary surgeon should be a man able and conscientious, who can command the confidence of his employer, and I believe that the body of veterinary surgeons do command that confidence, and are a credit to the profession to which they belong."

Mr. P. TAYLOR thanked the essayist for his admirable paper, and referred to the difficulty experienced by the veterinary surgeon in the examination of horses. Veterinary surgeons were considered by the public to be experts, and are therefore considered to bring to that position a certain amount of knowledge, but in doing so you have a living machine in different conditions at different times. He did not think it was in the interest of himself or his professional brethren to give an opinion immediately, the animal should be left with them two days at least to give a fair opinion.

After a few remarks from several other gentlemen respecting Mr. Fleming's paper, the PRESIDENT suggested that the discussion should be adjourned until the next meeting. This was agreed to, and after a vote of thanks to the essayist and the President, the meeting terminated.

Immediately afterwards, the members and friends sat down to an excellent dinner, and a very enjoyable and convivial evening was spent.

After the usual patriotic toasts, Mr. A. LAWSON proposed the Army, Navy, and Volunteers, in which he said the recent exploits of our soldiers under enormous difficulties proved that we could still proudly say that our officers and soldiers are what they always have been, brave and devoted to their country.

Lieut.-Col. LOCKWOOD, 20th Hussars, very ably responded, as also Mr. JAS. LAMBERT, 17th Lancers, who referred to the war in Zululand, in which, he said, the veterinary surgeon was exposed to almost as many dangers as any one else. As regards the veterinary department, he would like to correct a very erroneous statement with regard to the horses of the 17th Lancers. It was reported that the horses were suffering from some disease and could not be brought home, this was not the case, as nearly all of them were sold, and averaged £4 more than the original price in England.

Mr. BROUGHTON, of Leeds, proposed the health of the Lancashire and other Veterinary Medical Associations.

Mr. HILL responded, as also Mr. Briggs, who, as a member of the L.V.M.A., said: I have to offer to you our heartful thanks for your presence this evening, the success of this meeting, no doubt, being due to the presence of Sir F. Fitzwygram and Mr. George Fleming.

Mr. T. HOPKIN then proposed the health of the President, Members of Council, and Examiners of the R.C.V.S.

Professor W. WILLIAMS responded, and said : I thank you very much for coupling my name with the Royal College, of which I have the honour to be President. It was remarked by Mr. Hopkin that the profession at one time consisted of scattered particles. I can well understand that any one being the President of these scattered particles would have a difficult office to fulfill ; but the profession now are a united body, have worked and collected the particles like a sheaf of corn. My friend on my left (Sir F. F.), we all know what he did for the profession, how he bound them together and how he left them. I am very proud to say that the Council, so far as they are concerned, have well attended the meetings, and everything has worked in harmony for the well-being of the profession.

Sir F. FITZWYGRAM, Bart., said he thanked them for connecting his name with the toast. It had been a great pleasure to him for many years to have been a member of the College ; he had trust and confidence in the Council, and thought it had worked well for the best interest of the profession, and believed in future there would be no rivalry, except that rivalry as to the good, best, and highest interest of the profession. He briefly referred to the work of the Council during the last few years, and said there was one measure he was most anxious to see carried out, viz., that the matriculation examination be conducted under the auspices of the Royal College. He would be in Scotland Friday following, and hoped to gain the assent of the Scottish schools to the scheme which has been adopted by the Royal College of London. In conclusion, he said they had a Council which would work with one heart and one soul for the advancement of the profession of the veterinary surgeon.

Mr. W. A. TAYLOR proposed the health and success of the professors and Colleges.

Professor W. WILLIAMS, being the only representative present, duly responded.

Mr. GREAVES then proposed the next toast—viz., the Veterinary Profession. He said : The subject is an extensive one ; it would properly comprise the veterinary practitioner, veterinary student, his education, the teaching of the colleges, the teachers, the examiners and the Council. I will, however, confine myself to some of the points of progress of late years. I have been occupied in this profession for over forty-five years, I have felt it to be an honour to me to belong to it ; it is an honourable calling. I can remember the time when, if a student paid his fee, however defective his education may have been, the College was obliged to receive him. It is not so now ; all this is changed, and many reforms have been carried in late years. But my toast is coupled with the name of a gentleman who is not only a most distinguished cavalry officer holding one of the highest and most honourable appointments in Her Majesty's service, but he is also a veterinary surgeon who is not only highly respected but is beloved by us all. I need not tell you I allude to Major-General Sir Frederick Fitzwygram, Bart., he is not only noble by birth but is noble by nature, he has himself both able and willing to serve us—everything he undertakes to do is done well. As you all know, he has filled the presidential chair for three years, during those three years he never missed one general meeting one quarterly meeting or one special meeting of the Council, he spared neither time, trouble, nor expense to perform his duties thoroughly and in every way to serve and advance our profession. I have sat under many presidents during the last eighteen or twenty years, but none with such entire satisfaction. Need I remind you that the profession is indebted to him for effecting reconciliation in the profession? It is he we must thank for the practical examination of the student, for our new charter, our supplementary charter, for our voting papers whereby we can all vote for

members of Council without the loss of time and expense of going up to London on the 1st Monday in May. The very last act of his official life was to serve us, in an attempt to get the principal of each school together to enter into an agreement that the preliminary examination of the student should be transferred to the hands of the Royal College of Veterinary Surgeons, instead of as now in the hands of the teaching schools respectively. To sum up, what I have to say is this, that by his influence and wisdom the Council have been enabled to pass measures which will not only redound to his and their credit, but will benefit the Veterinary Profession as long as it exists, and without him these measures would not have been carried. Need I allude to the magnificent prizes to the students to induce them to become better men? These noble prizes are his gifts: in a word, he has done more for the Veterinary Profession than any other man.

In reply to the toast of the Veterinary Profession,

Sir F. FITZWYGRAM said: I thank you heartily for the kind and hearty welcome you have given me. He thought he might lay down in this as in every other profession, that science, real science, is and must be progressive. Now the questions that were present to him were, firstly, Is our science progressing? secondly, is it as progressive in the latter part of this nineteenth century, as the nation and the best and truest interests of science demand? When he looked some years back on the state of veterinary knowledge in this country, when he reflected that it is exactly one hundred years since the first school was established in England, when he looked upon the extended curriculum which the students undergo compared to what they had at an earlier date; when he looked further abroad, and looked upon the able works which of late years (and especially from the pen of Professor Williams) have been sent forth from veterinary pens, he thought he might venture to say that veterinary science has been and is progressive. With regard to the second question, he would, in this age of progress and knowledge, ask them all to answer it for themselves.

Mr. GEO. FLEMING also replied, and he felt in duty bound to say that the profession, so far as he was able to judge, was progressing. The younger members who joined the profession promised to be good members; on no occasion had there been more unanimity of feeling and good-will than on this, and he thought that argued well for the good of the profession. He thought recent progress had shown that the profession is quite willing and will soon be ready to take that high position which our science commands, and he trusted he would see the day when it would have attained a position infinitely higher than at present.

Mr. T. TAYLOR proposed the next toast—viz., the National Benevolent and Mutual Defence Society—which was very ably responded to by Mr. PETER TAYLOR, and also Mr. T. GREAVES, who said:

I have been very much pleased with what has fallen from Mr. Fleming this afternoon, and from Mr. Peter Taylor this evening, upon the subject, and in responding to the toast I have great pleasure in announcing that both the National Benevolent and Defence Societies are progressing favourably; we have about 150 members, our Benevolent Fund at the bank at this moment is £1,244 16s. 5d., that in the Defence Fund is £71 6s. 2d. During this year we have taken from the Defence Fund £400, and placed it in the Benevolent Fund according to our rules; we did the same thing in 1875. We have paid within the last twelve months £84 15s. 2d. out of the Defence Fund, the legal expenses for a trial at Leeds; we have paid out of the Benevolent Fund £10 towards the expenses of schooling for the two orphan girls of the late Mr. George Brown, a gentleman whose memory is respected by us all; during this year we have received a bequest of £52 3s. 4d. from the late respected Mr. William Field. Miss Dick has promised us £100 at

her death, and I know others who have not forgotten this fund, a fund which I hesitate not to say will afford a greater conscientious pleasure to those who contribute when we come to lie upon our death-bed than any other mode of leaving our surplus capital. I know and feel that this act will tend in some degree to relieve the want and sorrow of some poor widow and orphans of our deserving professional brother. I particularly wish to call the attention of every benevolent man to this matter. As to the defence portion, there is scarcely a week that passes in which we are not consulted on some unreasonable or unjust case or other. The experience your officers have had during the fourteen years of our existence has led us to the conclusion that in almost every case it is far preferable that an effort should be made to settle the case out of court; we could illustrate this by several cases where we have made bold to investigate the case, and by approaching the opposite party we have found him as ready to settle it as we could desire, and have settled it greatly in the interests of the Society. We could give illustrations of other cases where such a course was not pursued, and where we had to pay dear for it. I ask every member of our profession to come and join us.

SAM. LOCKE, *Hon. Sec.*

ROYAL (DICK'S) VETERINARY COLLEGE.

ON October 22nd the winter session of the Royal (Dick's) Veterinary College was opened with an introductory lecture by Principal Walley, in the theatre of the College, Clyde Street. There was a large attendance of veterinary surgeons and medical men, as well as town councillors and other gentlemen. The Lord Provost occupied the chair.

The LORD PROVOST said he had great pleasure in seeing such a large assemblage present. Several apologies had been received, including one from Sir James Gardiner Baird, who took great interest in the prosperity of the College, and also from Miss Dick. He was glad to think that, as years went on, the prosperity of the institution continued to be very considerable. Three years ago there were about 40 students; two years ago, 50; and last year there were about 80 in attendance. There were indications that this session there would be a corresponding increase. It was gratifying to know that very great improvements had been recently made in the premises of the College. They were now fully occupied, and adapted in every way for carrying out the work of the College. The grand feature of it, however, was that the professors worked so harmoniously together, and that so much energy pervaded every one of them. Such a state of matters was conducive to the conducting of the College in a way that would give satisfaction to all parties connected with it.

Professor WALLEY, who was received with loud applause, said that the College had been going on last year very quietly, but he trusted not without something good to show. Their staff remained as it was with one exception—namely, that Professor J. B. Balfour had been elevated to the post of Professor of Botany in the University of Glasgow. After referring to an alteration in the bye-laws, by which a student might now go up as often as he liked for any one of the examinations, he proceeded to speak of the Act which had recently come into operation for the suppression and prevention of contagious diseases amongst animals. That it has succeeding in circumscribing the spread of Pleuro-pneumonia and Foot-and-Mouth Disease there was ample evidence; and he looked forward to still greater benefits from its operation. In spite of the prolonged and intense cold of last winter, and the uncongenial and trying weather which had since prevailed, animals had never been, in this particular, so universally healthy. In regard to legislation with reference to diseases amongst animals, he said: "Legislation in these matters would

seem to advance at a slow pace, and in spite of the representations of practical veterinary surgeons, several diseases of an important character are left ought by sight and out of mind so far as interference by the State sanitary authorities is concerned. Foremost and most important of these neglected plagues is Rabies in the dog—the progenitor of the horrible affection known as Hydrophobia in man. Surely if it is found necessary to suppress diseases which are only indirectly injurious to man, it is infinitely more necessary to adopt vigorous measures for the suppression and prevention of such a dreadful affection as Rabies—directly destructive to man, and the most painful and terrifying in its nature of all known maladies—properties which are rendered more alarming from the fact that, so far, no measures have been discovered capable of combating its effects or relieving the sufferings to which it gives rise. There is no doubt that a difficulty exists in the adoption of radical suppressive measures to this particular malady which does not exist in the case of any other to which animals are liable—I mean the sentimental difficulty. Dogs of all animals are the most intimately connected with man, often, indeed, man's only companions and truest friends and helpers; consequently, any severe measures which might be applied to this animal would be jealously criticised and largely condemned by the dog-loving portion of the community, especially by the ladies. Nevertheless, I must emphatically declare—and I do not stand alone in the declaration—that the deaths of the majority of those of our fellow-creatures who succumb to this dire malady are preventible deaths. One great good arising out of the Act of 1878 is the framing and issuing of the Dairies and Milk-shops Order. It is a measure which was sorely needed, and, if properly carried out, must be productive of incalculable good. To a great extent its provisions were in prior force in Edinburgh, as under the Municipal Acts the magistrates had the power to insist upon due attention being paid to the sanitary arrangements connected with byres; and this power was used, two periodical visits having being paid by the market inspector and myself to almost every public byre in the city before the order was issued. To the condition of some of the byres, as found by us in our first visit, the term sanitary could not be applied. They were pre-eminently insanitary, and in some cases were scarcely fit to be inhabited by pigs, let alone animals upon which a large portion of the community depend for a supply of a wholesome and nourishing beverage. On our second visit, however, we found that the instructions given by us for the improvement of insanitary byres had, in many instances, been faithfully attended to; in a few cases, however, from a combination of prejudice, indolence, and occasionally of obstinacy, these instructions had been ignored, the result being that shortcomings in this respect were endorsed in the applications for licenses, so that the local authority had the power of dealing with the recalcitrant applicants as they appeared before them. The good effect of this proceeding, as shown by over a third visit paid during the past week has been striking. The provision of the new order to the effect that pigs or other animals shall not be kept in byres is an admirable one, and it is a marvel to me that it has not been put in force before. In one of the clauses of the order it is stated that milk from diseased animals must not be mixed with that which is intended for consumption. The provision is a very necessary one, but who is to enforce it? Every respectable cowfeeder will, for the sake of his own reputation, take care that none but healthy milk shall leave his premises for the purposes of human consumption; but even in the case of these careful and conscientious men, it occasionally happens that prejudicial reports are circulated as to the quality of their milk, these reports emanating occasionally from remarks made by doctors, and at other times from maliciously disposed persons. While it is true that the great body of dairymen will not stultify themselves by adding the milk of unhealthy to that of

healthy cows for the purposes of increasing their gains, it is equally true that a certain proportion will not allow their consciences to dictate to them as to what is the right course to follow when they have one or more diseased animals in their stock. It will, of course, occasionally happen that a proprietor is quite ignorant of the existence of any disease which may render the milk noxious, and this, unfortunately, is particularly true in reference to that insidious affection Consumption. On the other hand, in some instances, as long as an animal will give an appreciable quantity of milk, it is added to the daily yield, and the particular cow will be kept tenaciously in the stock, to scatter daily a poisonous product amongst that particular section of the public which happens to inhabit the immediate district in which she is located. That milk from diseased animals is frequently the means of inflicting irreparable injury, especially in children, there cannot be the slightest doubt; and I, for one, had a bitter experience of the fact during the first few weeks of my residence in this city. Now, the question arises—What is to be done where diseased animals are found in public byres? The local authority has not the power to order their destruction, and the most vigilant system of inspection will not prevent the admixture of the milk—small though it must necessarily be in quantity in most instances—with the daily yield, if the dairyman determines upon defying the authorities. In the case of Consumption, I am decidedly of opinion that animals so suffering—or even if reasonably suspected of being the subjects of the disease—should be immediately slaughtered; and if it is found after slaughter that the disease was not Consumption, but something of a curable nature, compensation should be made to the owner. As to the officers who should be selected for the carrying out of the order, I think that there can be no question that, at least, one thoroughly qualified veterinary surgeon should be employed in each district, with competent assistants as it is found necessary. It is rather amusing to find that in one or two instances medical men have proclaimed themselves as the only competent persons to carry out the provisions of the order; but, be it said to their honour, in other instances—notably in the case of the North-Western Association of Medical Officers of Health—medical men have declared that the duty can only be efficiently performed by veterinary surgeons. There are hundreds, ay, thousands of medical men who know no more about animals than animals know about them; and I fancy I see the effect if Dr. Brown, passing from a cowshed, redolent of its perfume, to the elegant boudoir of Lady Smith; and I still further picture to myself the same Dr. Brown walking into a byre to determine the nature of a disease from which a cow happened to be suffering at the time of his inspection. It may be some considerable time before the Dairies and Cowsheds Order is properly enforced; and if the views entertained of its purposes by some of the local authorities are carried out, dairymen will have to increase the price of milk in order to leave any margin for profit. Cleanliness, proper ventilation, and light for the cows by all means, but they may be carried too far, especially so where we see thousands of our fellow-creatures huddled together often in the precincts of fine cowsheds—in holes absolutely unfit for the residence of pigs. Associated closely with the dairies, we have the Milkshops Order, an order not promulgated before it was required. No natural fluid with which we are acquainted possesses the same marvellous power of absorption as does milk, and as on many occasions outbreaks of Typhoid Fever have been traced to its agency, some members of the medical profession have endeavoured to trace other diseases to this source, and in their anxiety to do so, one or two, at least, have not scrupled to attempt to brand our own profession with ignorance and incapacity. Fortunately, however, the attempt has failed, and they have thereby loudly proclaimed their own ignorance. That the carrying out of the Milkshops Order should be under the superin-

tendence of medical men there can be no doubt, as they are in the best position to detect and to know of the existence of zymotic diseases in the families of the shopkeepers. Perhaps in no place was this order more required than in Edinburgh and its environs, as in numbers of instances I have seen the open milk pans arranged on benches on one side of a room which was also used as a bed-room, sitting-room, and kitchen combined; and I have even heard that on one occasion a gentleman residing at one of our fashionable watering-places for the summer, was horrified to find that the milk which he had been using had been kept from day to day under the bed! I think, then, that we must all rejoice that an order regulating the sale of milk has been put in force; and we must also be gratified to find that in another division of sanitary science—viz., the inspection of meat—much activity, looking at the immense quantities of meat and fish which have been recently seized and destroyed, has been displayed. Only those who have seen behind the scenes can form any idea of the abominable materials which are sometimes worked up into all kinds of attractive forms for human food. Picture in your own minds a clean-looking butcher's establishment in which are exposed for sale different kinds of sausages, polonies, and other attractive compounds; descend through a trap-door in the floor into the manufactory of these delicacies, and behold a tolerable-sized iron boiler built into the chimney recess, containing a mixture of pork and mutton, recently boiled, in a half-putrid condition, with pieces of rancid ham, beef, and bacon lying about on dirty benches awaiting their turn to be boiled; a dirty bed in one corner, filthy stockings hanging on pegs, tubs of stinking grease, and sausage and mincing machines beplastered with the accumulations of generations of sausages and polonies. This, fortunately, is not an everyday occurrence, but I have witnessed it in this city; and in one instance something even worse than this. Infinitely would I prefer black puddings made up with horse blood—as I know to have been done in one town at least in England—and good nourishing horse-beef for our poor, than such vile compositions as I have described. Exposed in public market and in the abattoirs we sometimes see meat from animals which have suffered from the most repulsive affections, and none but those engaged in the detection of such stuff can form the slightest idea of the very accommodating opinions held by vendors of its fitness for human consumption. We must all, too, have been alarmed at the various reports which have appeared at different times of the existence of trichinæ in American pork, and it is somewhat surprising that the sanitary authorities have not instituted searching microscopical examinations, in a methodical manner, of cargoes of pork landed at the different ports from America. Probably when one or two outbreaks of Trichiniasis occur amongst us this will be done." Professor Walley then referred to the subject of cruelty to animals, and alluded to the dishorning of cattle. He said: "Several objections were urged against the substitute for dishorning which I have supported—viz., knobbing—the most prominent objection being that the knobs were sometimes broken and lost. Now, it occurred to me that indiarubber caps, secured by the aid of copper rivets, would be an admirable substitute. On mentioning the matter to Mr. Cunningham, of the Victoria Rubber Works, he suggested that the caps could be secured either by cement or by copper wire—first nicking the horns with a file if the latter were used—thus doing away with any boring of the horn, or anything else which could possibly give pain. Unfortunately the recent fires in Messrs. Cunningham's works prevented our carrying out the idea in time to show it to you practically to-day, but I think the simplicity and perfect adaptability of the plan must be patent to all: the cost will be a mere trifle, and I do not hesitate to say that those who practise dishorning with such a substitute available will be guilty of malicious cruelty, and will deserve the severest

condemnation at the hands of all lovers of animals." He next dwelt on the cruelty of the present system of slaughtering cattle, and hefting of the udder for the purpose of making the animals have a good show of milk. In speaking of the present agricultural depression, he said: "It is not in my province, neither is it my purpose, to enter into a dissertation as to the causes of agricultural depression or the remedies therefore, further than to refer briefly to one remedy which has been suggested as a panacea—viz., increased production. I have already drawn attention to this matter elsewhere, and have struck a warning note against the indiscriminate and unscientific use to which this advice is likely to be put by some farmers. Increased production cannot take place without the increased use of manures and allied substances; and I, with others, have no difficulty in proving that the excessive use of artificial manures is a prolific source of blood disease in, and constitutional deterioration of, animals. Artificially over-forced herbage does not possess the materials necessary for the building up of the tissues of animals and giving them sound constitutions; neither does it of itself possess that amount of stamina which it should do in order to render it profitable. Moreover, Professor Lawes has shown that beyond a certain point, stimulation of crops means absolute loss and disappointment. Large doses of artificial and small doses of natural manures have the same effect on plants as large doses of whisky with small supplies of solid food have upon man, and it seems to be entirely forgotten by some that the greater the amount expended upon a crop the greater the consequent loss if the crop fails. One thing has struck me very forcibly with reference to natural manure—viz., that many pounds' worth of nutritive matter must be annually lost to the farmer by the absolute waste of liquid which takes place from the great majority of midden-steads, and by the evolution of ammonia in allowing the manure to lie too long in heaps before it is ploughed into the land. In spite of the present gloomy outlook, I have too much faith in the inherent vitality of British agriculture, and in the perseverance and energy of the British farmer, to believe that the prevailing distress is permanent. Agriculturists have rallied from losses much greater, though, perhaps, not so prolonged, than the present—as witness their wonderful recuperation after the decimating scourge of Rinderpest, and the repeated ravages of Pleuro-pneumonia, Foot-and-Mouth Disease, and Sheep-rot; and they will rally again, though many will emerge from the struggle sadder and poorer, but, let us trust, wiser and more hopeful men." He concluded by giving some practical advice to the students.

The LORD PROVOST called upon Dr. Donaldson, who had examined the students in their general education, to address the meeting.

Dr. DONALDSON said that he had had for a considerable time the opportunity of examining the students, and his opinion of them rose each year. This year the examination had been a very satisfactory one indeed. In his intercourse with Professor Walley, he had become more and more impressed with the fact that he was a thorough, straightforward, honest, and upright man, and the community would not do justice to themselves if the numbers at the College did not increase.

On the motion of Major-General ANDERSON, C.B., a vote of thanks was given to the Lord Provost; and the proceedings terminated.

GLASGOW VETERINARY COLLEGE.

THE winter session of the Glasgow Veterinary College was opened on October 2nd, Professor Knox delivering the inaugural address. The chair was occupied by Dr. Adams, and among others present were Sheriff Clark, Rev. Dr. Johnson, Cambuslang; Rev. Mr. Storrie, Carmunnock; Rev. Mr.

Watson, Glasgow; Mr. Graham, Lambhill; Mr. Turnbull, Lambhill; Mr. Robertson, Glasgow; and representatives of the veterinary profession from Inverness, Aberdeen, Perth, Stirling, and intermediate towns.

Professor KNOX began his address by stating his ideal of the veterinary profession. "I have a very high ideal," he said, "of what the veterinary profession ought to be, and of the respect its members ought to obtain, not only from the holders of stock in this country, but from all classes of the community. When I think of what vast interests will one day be committed to your charge—that, for instance, one great department of preventive or State medicine—the food supply of the people—will almost entirely be under your supervision, and the lives, therefore, of the lieges at your mercy; that you will be the chief cultivators of that boundless field of comparative pathology and the chief exponents of its hidden treasures; that it is to your researches the physician looks for the clue to guide him in his investigations into the natural history and rational treatment of such diseases as Rabies or Hydrophobia, Glanders, Tubercle, and many others which, to conceal his ignorance, he is content at present to term specific; that it is from researches and experiments in comparative therapeutics the medical practitioner is anxiously awaiting additions to those means by which he is further to relieve human suffering and prolong human life; nay, more, when I consider what is to be your daily and livelong task—to interpret the wants of the great brute creation; to divine, as it were, the significance of its groans; to relieve its unexpressed pains, and to give a voice to its hitherto too often unheeded sufferings, I feel that your profession is a most noble one, and that its members ought to be the most highly gifted and the most perfectly trained of our scientific men. But, gentlemen, I am sorry to confess that I feel at the same time that as yet we have advanced but a very short way to the realisation of this ideal. Perhaps the blame lies with others as well as with ourselves. Indeed, seeing how necessary highly-educated veterinary surgeons are to the welfare of the general public, I am sure there are many here who, like myself, cannot conceal our astonishment that so little has been done for the profession by the State or by the outside public. We have all seen the public money lavishly squandered even by the most stingy of Governments, and that too upon objects bearing perhaps even less directly upon the public weal. Wherever man's life, or his power of doing work, for the State at least, are so openly menaced by hardship, or hunger, or disease, that the danger can't be overlooked, but is seen by everybody, Royal Commissioners proceed to investigate into it, the whole machinery of Parliament is set in motion to remedy it, and money is forthcoming in abundance. But let the danger be but ever so slightly veiled, either from its own intrinsic nature or from the ignorance of observers, no matter how insidious its progress may be, or how widespread its ravages, how slow we are to remedy it, or the remedy takes the form of a mere temporary expedient. When, for instance, an epidemic of Hydrophobia occurs, as it did two years ago in Glasgow, lengthy proclamations are issued by the terror-stricken magistrates, much money is spent, much labour is required, many men are employed, and all for what?—to catch and drown a few stray curs. Now, allow me to ask, was that a scientific proceeding worthy of a large and wealthy corporation? Again, certain diseases break out among our cattle. A cry goes up, whether well or ill-founded I say not, that it is from other lands these diseases come; and in answer to this clamour, by Act of Parliament foreign animals' wharves, with slaughter-houses and their appurtenances, are at once erected at our seaports, and the fiat goes forth that no cattle or sheep, however free from disease they may be, provided only they hail from a foreign shore, shall be turned loose to graze in our fields or be recruited after a long voyage before being converted into food for the people. Again I ask, Is this a scientific

method of procedure? Surely not. It may be expedient in the present lamentable state of ignorance, but of itself it is a confession of ignorance, of fear, and perhaps even of self-interest on the part of a few. But in my humble opinion it is beginning at the wrong end. Would it not be better, and wiser too, to spend money on the investigation of the causes, the natural history, and the results of these diseases, their modes of propagation, their limitation, and their treatment; to find out how much perhaps our inhuman methods of housing animals and conveying them on board ship from one port to another, our inattention to ventilation, and our wretched systems of drainage, are responsible for the origin and spread of contagious diseases? Would it not, in a word, be far wiser to devote some part of our means to the proper educating of scientific veterinary practitioners, to put the best means of study and research within their reach, and to endow them with laboratories and apparatus for the proper carrying out of their investigations? There is a good old Latin motto, *Fas est ab hoste doceri*, and in this respect we have much to learn from our Continental rivals. We have splendid examples both in France and Germany of what may be done by Government, guided by an enlightened public spirit. The veterinary surgeons here present know full well the immense obligations the profession lies under to France, which may almost be called the birthplace of the veterinary art. But we owe France a still greater debt of gratitude for showing us a college like that at Alfort, so munificently equipped and endowed, and the *alma mater* of the best educated and most scientific race of veterinarians the world has yet seen. Why should Continental nations take the lead in this respect? They have no greater interest at stake than we have, and they have not the wealth we have wherewith to carry out their plans. The only institution in this country in which comparative pathology is made a specialty is the Brown Institute in London, and for that we are indebted to private beneficence. The work done there and the instruction afforded to its students are simply invaluable. But this solitary and very small school is manifestly inadequate for a great and rich country like ours, with such a valuable breed of horses and such immense herds of cattle and flocks of sheep. Why should not every veterinary college in the country have attached to them similar laboratories to those of the Brown Institute, and be presided over by men, if not of the calibre, at least with something of the spirit of its superintendent, Professor Burdon-Sanderson. Why should, let me ask again, the very elements of education in the primary schools of the country, and Latin and Greek, mathematics and philosophy, in the universities, not to speak of the professions of law, divinity, and medicine, receive such largesses from the public funds? I may tell you that the two Universities of Glasgow and Edinburgh alone have within the last few years received about £200,000 from Government, while the veterinary profession and its colleges are still left out in the cold. But it is not only money that we want, we want also superintendence, guidance, and in fact, much the same treatment that the medical profession has received. We would be a great deal the better, I think, for a Commission to investigate our position, the means to be adopted both for teaching and examining students, the regulation of the years of study and of the examinations, from the preliminary examination in education to the final proficiency. The veterinary colleges might, even in Scotland, at least be connected in some way with the medical faculties of the universities, as indeed the Brown Institute is already connected with the University of London. This was a frequently expressed wish of a very good friend and patron of this College, I mean Professor Allen Thomson, and no one can doubt but that it would be an alliance fraught with advantage to both parties and professions. It is certainly a point to be steadily kept in view.[5] In concluding his address, Dr. Knox mentioned that an extension of

the school in Buccleuch Street is in contemplation for next year. "You are all aware," he said, "that at the present moment the farmers of this country generally are in a sad way—they are being ruined, they say, by the inclement weather, bad harvests, and foreign competition. A Royal Commission has been appointed to inquire into their case, and see what can be done for them. It will be some time, however, before Government can come to anything like a definite opinion on the subject, or much, if anything, can be done; and meanwhile, acting on the principle that God helps those who help themselves, Principal M'Call has determined to open a department for the teaching of agriculture in connection with this school. We in Scotland have always been famous for our methods of farming, just as we have been for our parish schools. But we have found out recently that in regard to the latter improvements were not only possible but absolutely necessary, and so it may be as regards farming. At all events, the present seems a highly favourable opportunity for inaugurating a course of instruction, both theoretical and practical, for the younger generation of farmers. In these days of high farming it will prove a great boon to many young men in a short course of lectures and demonstrations to be put at once in possession of the most essential information as regards the nature of soils, the proper food of plants, and the best methods of cultivation, with the results of the most recent experiments on these subjects. Lectures on all these subjects, illustrated by experiments, will be delivered in the College, and the farm at Flemington will be placed in connection with the department. This farm is quite a model one. It contains 460 acres of land. In its byres are at present over 100 cows, and on its pastures between 300 and 400 sheep. All manner of crops are grown on the best and most improved methods. Steam machinery and implements of the most expensive description are employed, and no necessary expense is spared to bring the land and the animals upon it to the highest state of cultivation and breeding. I look forward to immense practical benefits being conferred upon the community at large, as well as upon our future generations of farmers by this school of instruction."

At the close of the address a cordial vote of thanks was passed to Dr. Knox, on the motion of the CHAIRMAN; and on the motion of Principal M'CALL a similar compliment was paid to Dr. Adams for presiding.

NEW VETERINARY COLLEGE, GAYFIELD.

THE opening lecture of the winter session of the New Veterinary College, Gayfield, was delivered on October 22nd, in the theatre of the College by Professor Vaughan, F.L.S. There was a large attendance of students, and members of the medical and veterinary profession.

On the motion of Principal WILLIAMS, Mr. Woods, Fellow of the Royal College of Veterinary Surgeons, Wigan, was called to the chair, who briefly introduced the lecturer.

Professor VAUGHAN said it was now about six years since the late Sir Alexander Gibson-Maitland delivered the first opening address in this College, under auspices which the most sanguine amongst them could hardly look upon as very favourable. Those, indeed, there were who exercised the vocation of the prophet in a way that did not reflect very well upon their prospects. He did not wish to speak of himself, but his own total failure in this College was looked upon as the nucleus of a general collapse. That collapse did not take place, nor yet the failure, and he was thankful to say that they had progressed as well, in fact far better, than could have been expected. Referring to the question of preliminary education, he said it was no matter what the length or the nature of the college curriculum was, if they had not the material to work upon. The value of

preliminary education was sufficiently obvious on reflection. It might be said, What did the practitioner want to know about Latin, Greek, mathematics, or the abstract sciences generally? That was, to say the least of it, an ignorant question, since education of any kind expanded the mind. And what was the use of that? It rendered the mind able to grasp the subject, and not to absorb it like a sponge. It was frequently pointed out to them, sometimes politely and sometimes very impolitely, that all the veterinary science they had came from the Continent, and the claims of the Continent had certainly been immense. Veterinary colleges were more numerous on the Continent than in Great Britain, and perhaps better conducted; but the reason was that all the colleges on the Continent were supported by their respective Governments. They wanted Government support badly—that was to say, they wanted a little money. But there was one thing connected with Government support that he hoped Providence in its great mercy would keep them from, and that was bringing their colleges under Government control, and binding them together with red tape. But in speaking of the veterinary science of the Continent, there was a British veterinary science which should not be ignored. There was a strong tinge of the sportsman about the veterinary profession in Great Britain, and it was not detrimental to it. He hoped the time would never come when their field sports would be things of the past. This one thing ought to be remembered, their ordinary veterinary science had become more popular in England than in any other part of the world, simply because there were more sportsmen. But beyond all this, they had had scientific men who could hold their own with those veterinary authorities of the Continent so often spoken of. Percivall, and other authors, were quoted by Continental writers, so that if they had received all their science from the Continent, at any rate they had sent a little back again.

At the close a vote of thanks was accorded to Professor Vaughan for his address, on the motion of Mr. CONNACHIE, and a similar compliment was paid to the chairman, on the motion of Dr. DYCER.

MONTREAL VETERINARY MEDICAL ASSOCIATION.

THIS Association held its first meeting for the session 1879-80, on October 9th, in the lecture-room of the College. Principal Dr. McEachran was in the chair, with a full attendance of members. In his opening address the President briefly reviewed the past history of the Association since its formation in 1875. It was very gratifying to notice the continued and increasing interest evinced by the members in the meetings. He directed the attention of the younger members to the great benefit they would derive from their connection with the Association. The papers read, being always most interesting, and frequently on subjects not fully treated upon in the regular curriculum, were of great advantage to them all. The library, containing as it did nearly 300 volumes, and many of them rare and valuable works, was always at their disposal. It afforded him great pleasure to be able to inform them that its numbers were constantly being increased by donations from friends of the Association. Several volumes had recently been received from Dr. Fenwick, Dr. Liautard, and Dr. C. C. Lyford. In conclusion, he would state that the success of the Association had exceeded his most sanguine expectations, and he would urge upon the members the necessity of continued exertion to maintain its reputation.

The officers of the Association are—Dr. McEachran, F.R.C.V.S., Honorary President; Wm. Osler, M.D., L.R.C.P.L., President; C. J. Alloway, V.S., 1st Vice-President; Jas. Bell, M.D., 2nd Vice-President; M. S. Brown, Secretary and Treasurer; and Wm. Jakeman, Librarian.

A vote of thanks was proposed and carried unanimously, to Drs. Fenwick, Liautard, and Lyford, for their kind donations to the library.

The following gentlemen were proposed for membership :—F. Torrance, Compton, P.Q. ; A. J. Chandler, Coaticook, P.Q. ; Messrs. Thomas and Skully, Boston, Mass. ; Mr. Dunden, Salem, N.Y. ; A. Glass, Philadelphia, Penn. ; W. Wardle, Montreal, Que.

At the next meeting (Oct. 23rd inst.) Principal McEachran was to read a paper on contagious Pleuro-pneumonia, a subject that at the present time is one of especial interest, not only to the members of the profession, but to all that are connected with the breeding and exportation of cattle ; and Mr. M. S. Brown was to communicate a case.

Army Veterinary Department.

Gazette, October 31st.

VETERINARY DEPARTMENT.—Veterinary Surgeon M. F. Healy, Royal Artillery, to be Veterinary Surgeon, First Class.

Gazette, November 14th.

21ST HUSSARS.—Veterinary Surgeon, First Class, J. G. Bushman is placed on temporary half-pay on account of ill-health.

VETERINARY DEPARTMENT.—The promotion of Veterinary Surgeon, First Class, G. Fleming, from the 2nd Life-Guards to the rank of Inspecting Veterinary Surgeon, is post-dated to August 19th, 1879. Veterinary Surgeon W. Boyd, Royal Artillery, to be Veterinary Surgeon, First Class.

India Office, November 11th.

Veterinary Surgeon M. J. Marshall, of the Bengal Army, retires from the service. The following appointments have been ordered in India :—Principal Veterinary Surgeon F. F. Collins is appointed to the administrative veterinary charge of the Jellalabad Field-Force ; and First Class Veterinary Surgeon G. A. Oliphant to the same duty with the Cabul Field Force, with the temporary rank of Inspecting Veterinary Surgeon.

Now that the campaign in Zululand is terminated, we find that the Veterinary Department is mentioned in the highest terms in connection with it, those who held superior commands, from Lord Chelmsford downwards, all speaking in praise of the great services rendered by their veterinary surgeons, and the important influence these services had upon the success of the war. Not only does the Department as a whole receive well-deserved encomiums, but individual members are selected for special commendation. We are much gratified to find that H.R.H. the Field-Marshal Commanding-in-Chief has desired his acknowledgments to be made to Veterinary Surgeons Glover and Duck, and the last-named gentleman is selected for mention in the final despatch of Colonel Redvers Buller, V.C., C.B., commanding the mounted corps of the flying column which did such excellent service against the Kaffirs, Secoconi, and lastly against the Zulus. The despatch (dated July 5th), which is published in the *Gazette* for August last, says : "Veterinary Surgeon Duck, Royal Artillery, has been attached to the Frontier Light Horse for twelve months, and has had charge of the horses of all mounted corps. We have to thank his skill and unremitting attention for their efficiency. Mr. Duck has also accompanied the troops on all large patrols, and has frequently rendered me great assistance in action." On a

previous occasion he was reported by the same distinguished officer, not only for his professional skill, but also for his gallantry in presence of the enemy, and particularly during the retreat from the disastrous defeat at the Hlobana mountain on March 28th, when, taking a dead man's rifle, he volunteered his services in the rear-guard, and rendered excellent service at a most critical moment.

It is earnestly hoped that the recognition which has been so freely accorded in the field may not—as it has always been hitherto—denied our colleagues by the higher authorities at home. Of all the departments in the Army, the Veterinary is that which is most studiously ignored and most ungenerously treated by those who are in power at the Horse-Guards. Such ill-deserved treatment is, to say the least of it, short-sighted, and we are certain that the country would not tolerate it for an hour, did it only know the state of affairs.

Obituary.

We regret to have to announce the death, on October 27th, at Shorncliffe, of First Class J. Mills, Army Veterinary Department, and late of the 18th Hussars. Mr. Mills graduated in 1867.

The demise is also reported from India, of First Class Veterinary Surgeon A. E. Clark, Royal Artillery, on October 23rd, of Pulmonary Apoplexy. He received his diploma in 1857.

Mr. W. B. Taylor, of Auston, Rotherham, died on September 20th, aged fifty-one years; and Mr. W. Hamley, Bodmin, Penzance, died on the 9th of that month. The former graduated in 1853, and the latter in 1868.

With much sorrow we received the news of the death of Mr. John Sherriff, of Calcutta, who received the diploma of the Royal College in 1871, but had been a certificate holder of the Highland Society since 1854. In that year he went to India, and soon became proprietor of the firm of Messrs. Hunter and Co., Calcutta, where for a long time he conducted a prosperous business. He died in Australia on September 13th, and the following friendly notice of the mournful event appeared in the *Melbourne Leader*:—"Mr. Sheriff resided in India for twenty-five years, and was well known by all the shippers and breeders of horses throughout the Australian colonies, whose business he transacted for many years with entire satisfaction to his clients. Those who now proceed to India will miss in the late Mr. Sheriff a kind friend, whose genial smile, open hand and heart enabled many importers of horses to tide over difficulties they had to meet with in a climate like India. He kept open house to all who chose to share his hospitality, and when any European was sick would tend them with a mother's care. As a veterinary surgeon he stood at the top of his profession, his opinion being universally relied upon. At last domestic bereavement and failing health compelled him to come to Australia, where he died."

Notes and News.

The Immunity of Algerian Sheep from Anthrax.—A very interesting memoir has lately been presented to the Academy of Sciences by M. Chauveau, of Lyons, on the influence of the breed of sheep, or of the source whence they are obtained, on their liability to contract Splenic Apoplexy. Just at present large numbers of sheep imported from Algeria are met with in the Lyons market, all of them belonging to the so-called Barbary breed, either pure, or more or less crossed with the large-tailed Syrian race. At various

times M. Chauveau bought nine of these sheep, and inoculated them with the *charbon*. None of them contracted the specific disease, all alike resisting the infection. This immunity was not assumed from the results of one inoculation alone. In the case of one animal it was repeated five times, and in nearly all the others at least three times. In every instance the infectious matter was carefully selected, and skilfully introduced by various methods of inoculation. While these Algerian sheep without exception resisted repeated inoculation, rabbits and native sheep, submitted to a like test, contracted the infection at the very first operation. Hence M. Chauveau believes it may be assumed that the Algerian stock are endowed with the happy immunity from the disease, and that this may be considered as a general characteristic of the whole breed, and not an accidental occurrence in a few individuals only. This latter point could soon be determined by a more extended system of inoculation. The importance of the question can scarcely be over-rated. If their immunity be characteristic of the breed, it is most desirable to establish the fact, both from the point of view of the special applications which might be made of a knowledge of their peculiarity, and with respect to the general scientific conclusions which might be drawn from it. If, on the other hand, the immunity be acquired, it is still more important to know it, so as to arrive at the determination of the conditions which prevent the prolification of the Bacteria of *charbon* in the sheep. The discovery of these conditions would be an immense benefit to agricultural interests, rendering it possible to create immunity from the disease at will, since there is every reason to believe that they are of a nature to be induced experimentally. Professor Chauveau intimates his intention to continue his investigations on this important subject.

INSTINCT OF HORSES.—There is a remarkable exemplification of instinct in horses, which may or may not be peculiar to horses bred in the pampas, but which I have never seen in print. It is the wonderful manner in which horses, taken away from their birthplace, will return as soon as they regain their liberty. I have known horses return two or three hundred miles, swimming rivers, and overcoming every obstacle. It matters not if they be taken away at night, or by a circuitous route, they will find their way back, not indeed by the circuitous way they may have come, but in a direct line. It always appeared to me a marvellous instinct which could guide them so unerringly over such long distances, over immense open plains, with scarcely a landmark to assist them. This instinct, though common to all horses that are taken from one breeding-ground to another, is, however, much stronger in some than in others. For instance, horses reared on rich pasture have the instinct much stronger, or at least they retain it much longer, than those reared on poorer lands. Those bred in the districts of the Montes Grandes, where the grasses are especially luxuriant, scarcely ever lose this home-pining; and though they are the finest-looking horses in the republic, they are of little value to farmers, as it is next to impossible to keep them from straying. As hacks, in the city of Buenos Ayres they soon lose this instinct, probably owing to total change of diet and the comforts of a stable. A very marked exception to this instinct is to be found in the *Bagual*—strictly speaking the wild horse of the pampas, as distinguished from his domesticated or semi-wild brethren of the settled districts. The *Bagual*, when captured, tamed, and taken to the settled districts, seems to lose this instinct entirely. He has also another very singular peculiarity—the transformation from a wild to a domesticated state causes him to lose his gregarious habits. He will stray away here, there, and everywhere, but seldom will he associate with other horses, and never with the same for any length of time. This horse is popularly supposed never to become thoroughly confidential for riding, being, it is said, apt to

buck-jump and plunge when least expected. I, however, had one for five or six years. He was very quiet and steady, and a good, useful horse for general purposes. He would not have the head-collar at any price, but would stand saddled loose all day long with the reins put behind the stirrup leathers.—*Live Stock Journal.*

RABIES IN SHEEP.—The *Landwirth* records an outbreak of Rabies in a flock on the Pohlschildern estate, in the district of Liegnitz, during July of last year, consequent on some of the sheep having been bitten by two rabid dogs on the same property. Within eight weeks about thirty of the sheep fell victims to the disease. No fresh cases having occurred for a very considerable time, it was concluded that all danger was passed, until, on September 12th of the *present year*, undoubted Rabies again appeared in the same flock. The nature of the outbreak is positively confirmed by the official veterinary surgeon of the district, and, in the absence of any other explanation of its origin, it must be referred back to the accident of July, 1878. If this hypothesis be correct, the disease must have remained latent for upwards of fourteen months before making itself manifest.

RABIES IN ENGLAND.—Several outbreaks of Rabies have occurred lately. Cases are reported from Sheffield, and deaths from Hydrophobia. In the West of England the scourge has shown itself among hounds; and we are informed that not long ago a well-known pack in Cornwall was destroyed from this cause; and recently two hounds from that county were introduced by the master, Mr. G. A. Bragg, into the kennels of a pack of harriers at Moretonhampstead, on the borders of Dartmoor. The imported hounds soon showed symptoms of Rabies, and after they had bitten several of the harriers, were shot. Ultimately the whole pack had to be destroyed. At Taunton a rabid dog has wounded several people, as well as a number of pigs, one of which has already died of Rabies. In Glasgow a woman has perished from Hydrophobia; she was bitten by a rabid dog about four months previously. At Preston a boy has also died from this malady—another victim to the bites of the rabid mastiff alluded to in a leading article a short time ago. Rabies is also becoming only too well known in Dublin.

BRUTAL TREATMENT FOR COLIC IN INDIA.—A correspondent to the *Asian* gives the following startling illustration of the treatment of animal diseases among the natives of India. A few days ago a mule belonging to a Bhooteah *sombah* was seized with spasmodic Colic. The attack seemed very seyere, and the natives looking on for a considerable time allowed the poor animal to struggle in its agony. By the advice of a gentleman present, hand-raking was tried by a Bhooteah, and some fæces with flatus evacuated, but not to any great extent. I happened to be near, and thought of relieving the animal with the common mixture of opium, chloroform, and turpentine, but before this breparation became available a Bhooteah *tashoo*, or medicine man, appeared on the scene, and what followed amused and surprised us all very much. Having taken a hair from the mule's tail and threaded a large needle, he opened first the left eye and passed a stitch through the piece of flesh in the inner angle of the eyelids. Drawing it out, he cut off a piece the size of a small pea, which an assistant at once passed up the mule's fundament. A similar operation was performed on the right eye, and the piece removed was deposited in the same curious locality. Then having pulled down the lining membrane of the nostrils, the operator made a slight cut towards the septal side in each, but not sufficient to draw blood. Some prayers were then recited, images of butter were placed on the ground, and congratulatory interchange of *pán* and betel having taken place, the ceremony ended. The animal did not lose altogether more than a drachm of blood. The onlookers not understanding the *rationale* of the whole proceeding were rather surprised to see the mule suddenly revive on receiving

the first cut. He at once commenced to graze, though for twenty minutes or more previously he had been writhing in agony. We naturally spoke of it as a coincidence. The duration of the case, the considerable interval that elapsed between the hand-raking and recovery, and the apparently instantaneous nature of the latter, rendered the coincidence, if it was only such, rather striking. The germ of some truth may perhaps lie hidden beneath the gross absurdity of the formulæ.

THE VALUE OF A DEAD HORSE IN PARIS.—The value of a cab-horse in Paris which, from accident or age, is no longer useful for harness purposes, is estimated at 68 francs, apportioned as follows :—Skin, 13 francs 60 centimes; hair, 1 f. ; blood, 6 f. 30 c. ; nails, 12 c. ; shoes, 1 f. ; viscera, 1 f. 60 c. ; tendons, 30 c. ; intestines, 1 f. ; grease, 4 f. 98 c. ; bones, 2 f. 30 c. ; flesh, 35 f. The ultimate destination of the skin is the tan-pit, the tendons are used for glue, the feet for oil, the bones for animal black, the blood for Prussian blue, while the horse-flesh finds its place as a *piece de résistance* in the cheap restaurants.

Correspondence, etc.

THE ECRASEUR IN CASTRATION.

To the Editor of the VETERINARY JOURNAL.

SIR,—In the number of your widely-circulated Journal for September last, I read with much interest Principal Walley's remarks on "Castration of Cryptorchid Horses, and on Hæmorrhage after Ordinary Castration." In the latter part of his letter he mentions my father as having largely used the ecraseur, and adds that I would give the necessary information about its use to a correspondent. With your permission, and in deference to the worthy professor's wish, I request the insertion in your valuable Journal of the following remarks :—

Having secured the animal by the aid of hobbles and back-strap, on its back, the operation is proceeded with as for castration by the clams—viz., cut through the coverings of the testicle, and expose that organ ; then place over the testicle (and fairly high up the cord) the chain of the ecraseur, tightening it by compressing the springs ; the operator now, when the chain is somewhat tight, works each bar of the instrument alternately—my father always found it best to tighten slowly, to give the chain proper time to crush through the integuments of the cord—and slowly, till he thinks the cord properly and sufficiently crushed. The cord can then be either crushed entirely through, or cut with the scalpel just below the chain. If the latter method is adopted, try to crush the cord a little more. The operation over, the animal may now be released without anything further being necessary.

Now, I can confidently say, from the long experience of my father, and having myself operated with the ecraseur, that it is the safest, best, least troublesome, and most scientific mode of operation. There is no subsequent hæmorrhage (or if so, nothing of any moment), no pain (having seen animals immediately feed on getting to their feet), no swelling, and no subsequent trouble with the removal of clams, etc. I have known many instances where the ecraseur was used in castration for the first time, and the owners subsequently would have no other mode of operation performed, so highly pleased were they with its good results. I have never seen the smallest amount of hæmorrhage, and therefore I would not think there was

any danger from the ecraseur itself, unless the artery was improperly crushed, as I pointed out in the *modus operandi*.

Hoping I have not trespassed too much on the space of your valuable Journal, I am, yours respectfully,

Longford, Ireland, *October 17th*, 1879. ROBERT B. PRENTICE, V.S.

PROFESSIONAL ADVERTISING.

To the Editor of the VETERINARY JOURNAL.

SIR,—On taking up my *Sporting Gazette* yesterday, my eye was attracted by a very conspicuous advertisement of a veterinary surgeon on the front page, and I was truly astonished to find that respectable gentlemen should have to resort to so common a method of "pushing" their business; but my astonishment increased a hundredfold when I came across two others, both of them so very "shoppy" in their style, that I hasten to cut them out and send them to you—not with any personal feeling in the matter, for all the gentlemen mentioned in the advertisements are unknown to me in my business, although two of them reside in the same district of London as myself. Should you think it advisable to bring this sort of thing before the profession, I shall be glad if you will reproduce the advertisements (which I enclose), in your valuable Journal, together with an expression of opinion from yourself on the subject. I am, sir, your faithful servant,

London, *November 10th*. "A WEST END PRACTITIONER."

[Our opinion with regard to this kind of advertising has been only too often expressed, and we regret that we have again to protest against it as unprofessional, and positively injurious, not only to the entire body, but also to the individuals who endeavour to obtain notoriety in this way. We do not publish the advertisements of the gentlemen, sent by our correspondent, as this would be only adding to their publicity, and perhaps assist them in "touting for custom." They perhaps forget that this is the mode adopted by quacks only; medical men never resort to it, except in extremely rare instances, when caste has been lost and professional dignity obliterated.]

TUTORIAL *TOGAS*.

To the Editor of the VETERINARY JOURNAL.

SIR,—Under the title of "Honest Competition" began the agitation on College fees and practice, and I now observe that a new title has been adopted—"Grievances." I, however, have no wish to enter that arena of debate. But I have been much puzzled, Mr. Editor, to understand the *why* and *wherefore* the teachers at the Royal Veterinary College at Camden Town assume the *toga*, and all my friends are in the same fix or fog. We read that the Romans permitted their youth to don the *toga* on entering the fourteenth year, which they termed the *toga virilis*, or "gown of manhood." Surely, sir, in this instance it is not to distinguish the teacher from the taught? In modern times, in this and other European countries, the *toga* is, I believe, only donned by university graduates, members of the bar, and ministers, or those admitted to holy orders. None other, so far as my research goes, lay claim to appear in *toga*, and I fail to find an instance of its assumption by the medical teachers in hospitals.

Is it, then, for the purpose suggested, or from antiquated notions that such a new innovation obtains? or is it to be in strict keeping with the ancients, and the dark ages of Greece and Rome?

I will not say it is absurd, presumptuous, or bordering on quackery; the

costume has doubtless caused many a smile to appear on an opening day on the faces of the noblemen and gentlemen present. Possibly you, Mr. Editor, may show some legal claim or necessity for *toga*, and enlighten

London, *October 1st*, 1879. Yours respectfully, B. A.

[We are under the impression that only those teachers who have taken a university degree are entitled to wear the gown. But it may be that distinctive gowns are allowed to be worn by other corporations than universities—as the Royal College of Physicians. The right to wear a gown—in public at any rate—has always appeared to us to depend upon the possession of a "degree" in the strict sense of the word—*i.e.*, a distinction only granted by a university; or the holding a diploma granted by a body—*e.g.*, barristers—who by custom or special regulations of its own acknowledge the wearing of gowns. Unless as a distinction, the necessity for the gown is not very obvious. In cold weather, and in old age, when the circulation is languid, especially in the extremities, a supplementary article of clothing is undoubtedly useful; the gown might then be designated *toga senilis*. Our correspondent and others who would like to know something of the comic aspect of *toga*-wearing, we refer to the "Adventures of Verdant Green, an Oxford Freshman" (p. 37 *et seq.*). We can merely give one remark of the smirking robe-maker in commenting on V. Green's application for the classical piece of tailor-work: "I think, sir, there is a leetle mistake here. The gentleman will be hinfringing the university statues if he wears a scholar's gown and hasn't got a scholarship; and these robes'll be of no use to the gentleman, yet awhile at least."]

"THE GRIEVANCES."

To the Editor of the VETERINARY JOURNAL.

SIR,—I have lately become absorbed in the present agitation; much so since I read your plain, open-minded Editorial. I feel I should have a word to say on the matter. I knew the College in Sewell's time, and well do I remember Spooner succeeding him. I have heard my friends talk over the College career from Coleman's time, so I am pretty well up in its history.

I talked to Spooner about this "co-operative" or "subscription" business years ago. "Well," he said, in his usual dry way, "to start the college, this system was adopted; and if the practitioners object to it they should speak to the governors. I cannot complain."

The late William Mavor often said, "They make veterinary surgeons at Camden Town, and then starve them." However, change and improvement being the order of the day, I see no reason why we should not mend our ways, and begin at the "fountain head."

I am now going to speak "plain" to the *leading* members. I mean those who are doing a good trade. I was sorry I did not read their names on that "requisition" paper. These men should come forward; they must be independent of the College and its teachers, and above toadying them. I asked a member the other day how it was, and he told me that several of these men said, "Oh, we don't think you will do any good; if we did, we would sign directly." Sad excuse! I am ashamed of them! But although their names are not there, we find others of equal professional value—rising young men, whose brain, not purse, will raise our standard high.

The "system" must be treated like a "festering, unhealthy sore"—probed to the bottom, and the body corporate made healthy and sound.

The Principal of the school must assist or belie his new College motto.

Now, sir, I wish to ask what other system is suggested? It occurs to me that a "Veterinary Senate" would be a good innovation, and that *it* should

select from the body the names of those gentlemen qualified to lecture on various stated subjects, and appoint them to lecture for a term, then re-appoint or elect others. By such a system talent now latent would burn bright, and impetus be given to the members for study and research. The practitioner would then have interests in common with the school. The College should boast of an intelligent Principal, and say two assistants—*i.e.*, hospital surgeon and demonstrator, the remaining officers being selected from the senior students.

I have roughly stated my ideas, and shall be pleased to hear some sensible resolutions brought forward at the special meeting, so that valuable time may be spared.

I hope the College people are bestirring themselves honestly in the matter, as they should and must do, for I have great veneration for the old school at St. Pancras, having passed many days there pleasantly and profitably. No one has a more hearty desire to see it stand in its proper position.

I must now close or trespass too far on your valuable space; but before I do so, I must say, and boldly too, that I admire the way you have deported yourself, Mr. Editor, in this rather unpleasant agitation. You have again proved yourself to be truly a man of courage, an Englishman who can and will speak his mind when occasion demands without the least semblance of fear. You deserve well of "the civil practitioner," and I wish I could only say as much for the "big pot" London men who are afraid to open their mouths.—I am, etc.,

"AN OLD COCKNEY."

London Suburbs, *November 12th*, 1879.

THE VALUE OF A PROFESSOR'S OPINION ON HALTING AND HOBBLING.

To the Editor of the VETERINARY JOURNAL.

SIR,—In your last number a letter is published signed "Radix" under the above head, which quotes a *Daily Telegraph* report of a case of alleged cruelty, prosecuted recently by this Society, hastily assumes that such report is accurate, and as hastily deduces therefrom certain conclusions which are in reality (whether intended or not) reflections on this Society.

Your correspondent is quite at liberty to regard the newspaper referred to as trustworthy; but if he be a veterinary surgeon, as the phraseology of his letter implies, he ought to have known that the report in question contained at least one inaccuracy, namely, that Mr. Phillips, who appeared for the defence, is not a veterinary surgeon.

"Radix" assumes that Professor Pritchard and officers of this Society are unable to distinguish between what he calls "Chronic Halt," that is, lameness without inflammation, from lameness with acute inflammation; but that the magistrate and an unqualified hanger-on to the profession are able to make such distinction. It is not likely that many of your readers will agree with him; especially when they learn that on the day when the horse was at work and examined by the officer (who has been twenty-six years in the service of this Society,) and when it was examined two or three days later by Professor Pritchard, very prominent and marked suffering was seen and reported to this office, for the animal then could scarcely bear any weight on its lame leg.

"Radix," unlike a loyal member of your profession, apparently rejoices over a victory obtained in a police-court against Professor Pritchard by a man who calls himself a veterinary surgeon and is not. To my mind, sir, an honourable member of your profession would not gloat over such circum-

stance. On the contrary, he would ask himself—"Can it be possible that Professor Pritchard is ignorant of a simple matter of every-day practice? is it likely that the magistrate (Mr. Paget) is more competent to decide a question of veterinary practice than Professor Pritchard?" If "Radix," instead of rushing into print as a Zulu rushes at his enemy with his assegai, had permitted himself to answer the above questions, perhaps the thought would have occurred to him (as undoubtedly it would occur to every real veterinary practitioner) that there was a lapse of time between the date when the animal was first examined and the hearing of the case when it was brought up to the court. Such lapse of time, it is well known, is generally utilised by a defendant; especially if he be *un*fortunate enough to employ a mere hanger-on to the profession, instead of a respectable veterinary surgeon.

The truth is that it is mere childishness or bad animus on the part of "Radix" to pretend that he believes in the righteousnes of the magistrate's decision. If Professor Pritchard be incompetent, as "Radix" would have us believe, his rank in the profession should be lower than that of a full-fledged student. If he be competent, his evidence must be taken by the profession, unless they believe him capable of perjury. It will, however, be regarded as an amusing feature of this case, that from the moment since the summons was dismissed by Mr. Paget, the wretched horse, which was the subject of the prosecution, has been *non est inventus*. It has performed no labour, and we are assured has been well nursed, and is still under treatment.

The reflection cast on this Society by "Radix" will, I trust, be removed by the above remarks.

Royal Society for the Prevention of Cruelty to Animals,
105, Jermyn Street.

I am, sir, yours, etc.,
JOHN COLAM, *Secretary.*

A NEW ENEMA INSTRUMENT.

To the Editor of the VETERINARY JOURNAL.

SIR,—In last month's issue of the VETERINARY JOURNAL, an illustration is given of a new enema pump, which is described as "being compact, handy, easily carried, and *only* costing about two guineas."

Seeing this notice has induced me to say a few words respecting a new enema tube, as I have termed it, which I have had made, and which is acknowledged by all who have seen or used it to be the simplest, cheapest, and the most compact, durable, and effectual of any yet invented. It can be carried in any pocket, save the waistcoat—a great *desideratum* to the veterinarian when travelling on horseback; it weighs under eight ounces, and cannot possibly get out of order however roughly handled. I never think of visiting those so-called Gripe or Colic cases without taking one, and in severe cases I always leave one for the attendants to use every few hours upon the patient, which they can readily do after seeing it once used. In several instances the owners have wished to keep one by them in readiness for the next case, *so I charge five shillings each for them.* At the time I am penning this I have three of them in use in different neighbourhoods. I also find this instrument useful for giving gruel, etc., *per rectum*, to patients suffering from Strangles, and other causes of abscesses in the region of the throat threatening Asphyxia, and where there is difficulty in deglutition. In horses, too, that are troublesome in taking medicines *per orem*, I have frequently given them by this method, such, for instance, as chloroformum, aconitum, ol. terebinth., etc., with very satisfactory results; though now in Colic cases I generally

use my hypodermic syringe, aided by two to four quarts of lukewarm soapy water, given *per rectum* with my enema tube. Again, for introducing such agents as *liq. sodii chlorid. dil.; inf. quassiæ; ol. terebinth. c. liq. calcis*, for the purpose of expelling *Oxyurides curvulæ* from the rectum, which parasites so often set up irritation about the anus of their "host," and cause obstinate "rubbing of the tail." Another advantage this instrument possesses is, that the fluid given runs into the bowels by its own gravity, without any force whatever being used, and this, I believe, is the reason that the patient stands so quietly during the operation, and does not reject the fluid so quickly as when it is forcibly introduced.

The manner of using the enema tube is simply as follows:—The patient is turned round in the stable in such a position that the hind-quarters stand highest. Have a pail by you containing about a gallon of lukewarm water, having a little soap dissolved in it; insert the tube about four inches in the rectum, and pour the soapy water in the tube as quickly as possible by means of a jug, then withdraw the tube, and hold the animal's tail down for several minutes. I find that by giving a large quantity of fluid the first time it is soon rejected, and so effectually empties the rectum without having recourse to "backraking;" after this I give small quantities—about two quarts, which is usually retained for a long time, and sometimes I never see or hear of it being returned. By way of experiment I once poured two large stable pailfuls of water into a patient's rectum, and might have given more, and never saw a drop of it returned during the time—half an hour—that I stayed with the case, which was one of "stoppage in the bowels." It recovered on the following day.

Portability being a great object in the equipage of the army veterinary surgeon, I should strongly recommend this instrument as a substitute for the heavy, cumbersome barrel syringe, as it would occupy scarcely any room in the veterinary medicine chest, and is much handier, etc., to use.

I have the honour to be, sir,

Your most obedient servant,

JAMES WEBB, M.R.C.V.S.,

Late V.S. in the Royal Horse Artillery.

Bishop's Stortford,
November 6th, 1879.

THE RESPONSIBILITIES OF VETERINARY SURGEONS.

To the Editor of the VETERINARY JOURNAL.

SIR,—The very interesting and instructive paper on the above subject, read by Mr. George Fleming at the meeting of the Lancashire Veterinary Medical Association, and published in the last number of the VETERINARY JOURNAL, will no doubt lead to much comment. As I took part in the discussion which ensued after its reading, and as I then expressed some dissent from a few of its arguments, I beg to ask space for this letter. As a military veterinary surgeon, I venture my opinion, because it is a subject which I have frequently heard discussed in different parts of the country, and perhaps in the army we have a better chance of hearing unbiassed and independent views than the civilian practitioner.

To my mind, an amount of responsibility was assumed in the paper, and was apparently accepted by the meeting, which is out of proportion to the remuneration received by the medical man or the veterinary surgeon. Let me begin by quoting from the paper: "It has been well observed that where a person is employed in a work of skill, the employer buys both his labour and his judgment. He ought not to undertake the work if he cannot succeed, and he *should know* whether he can or not. Thus if a *farrier* undertakes the cure of a lame or diseased horse, he is bound to apply a reasonable degree

of skill to the cure, and if through his *ignorance* or bad management the horse dies he will be liable for the loss. So, if a ship's carpenter undertakes to build a ship," etc.—"Story on Bailments." The italics are mine, and I beg to call particular attention to them. The assumption of the writer, Story, quoted by Mr. Fleming, is evidently, from his using the term "*farrier*," and immediately afterwards employing the illustration of the *carpenter*, that the doctoring of a horse is a simple and uncomplicated matter like making a ship or a box or clock, or any other mechanical contrivance; and he therefore argues as if the surgeon could control the living body in the same way. He is not to blame for this, for it is the idea possessed by seven out of every ten men one meets, and is the foundation for the undeserved ridicule, and sometimes odium, to which surgeons and veterinary surgeons are too often subjected. It is, however, an idea engendered by ignorance of the wonderful structure of the animal body, and by forgetfulness that a living sentient organism, not made by human thought or power, is constantly changing, and is not, like the production of man, to be moulded at will. In its practical bearing on the question this was forcibly brought forward at the meeting by Sir Frederick Fitzwygram.

I beg to dissent from the opinion that a surgeon or veterinary surgeon is *justly* responsible at law for the consequences of his ignorance. If really clever lawyers held this opinion, cases would be so frequent that the judges of the land would have to be doubled; but those who have acted on this erroneous assumption have almost always found juries against them, and therefore an adviser is rarely found who counsels so rash a proceeding. A client might just as logically sue a solicitor who had advised him that he has a good case, but who finds in the result that he had no case at all.

In saying what follows, I hope I shall not be understood to be advocating the excuse of ignorance or malpractice: nothing is further from my thoughts. I only state my views as a contribution towards a right judgment between professional man and client. Who is to prove the ignorance of the professional man? Let me offer an illustration. One learned professor of human medicine says, "In Pneumonia I will bleed and deplete the patient;" another, equally eminent, says, "I will, on the contrary, give my patient plenty of brandy and strong stimulants;" another says, "I will give no medicine, and will do nothing except leave all to nature and good nursing;" another says, "I will apply mustard or some other strong counter-irritant to the skin of the chest;" another says, "I will not apply any irritant to the skin of the chest in Pneumonia, for to do so is likely to cause the patient much harm;" and still further, another, who can equally boast of success, says, "I will only for an hour or two at intervals pour cold water on the chest of my patient, and this treatment will give him the best chance of recovery." Now every one of these gentlemen is firmly convinced that his particular mode of treatment is the best, yet all are almost diametrically opposed to each other. Where is the ignorance, and where the bad management? This example alone shows that the "box and clock" argument is not of much value in this question.

Reasonable skill, of course, is necessary, but the common-sense view of the matter is, that the employer of the professional man, being free to choose, engages him because he thinks his ability, which as proved by the above illustration is only *matter of opinion*, will suit his purpose, and he is not entitled to fix a standard of knowledge unless there be some special agreement. Professional men succeed by *reputation*, and the public will never allow that all of them are competent; on the contrary, they are often found saying that it is impossible they can be so. The above view of the matter would therefore seem to have been hitherto generally accepted. It appears to me quite unreasonable to say, that because young men are granted a

diploma they are therefore assumed to be able to do everything connected with their profession with skill. We all know that they are not, and that some never will be; therefore it would be monstrous to hold them legally responsible on medical points, where there is so much divergence of opinion.

A pending case would seem to show that a veterinary surgeon examining a horse is, by some people, thought to be liable even to the full value of the animal, if he should make a mistake, whether wilfully or not. At the meeting I said, "If this be the case, you will have to revise your fees. If you are examining a horse worth three hundred guineas for half a guinea, you are laying six hundred to one that you are right." I venture to say that no prudent man, if held legally responsible, will long be able to lay such absurdly disproportionate odds; for we all know that the most careful and experienced veterinary surgeons cannot sometimes avoid mistakes in examinations for soundness. I have met a few who said No, but they have been young men without much experience, and time makes them wiser.

In the London *Times*, of October 15th, 1879, is a paragraph, on page 10, headed, "The Evidence of Experts," which forcibly bears on this subject. It states that the distinguished Italian professor, Tommassi, announced at a meeting of a congress of medical men assembled at Naples, that he had observed in criminal cases a practice which is indefensible in the presence of justice, of science, and of common sense: that is, the selection of experts for the defence by the advocate, and of experts for the accusation by the Attorney-General. This enormity, he said, ought to be abolished. The expert for the defence, having been selected by the advocate, is almost under an obligation to find excuses for the prisoner at the bar, while the expert for the accusation, having been selected by the Attorney-General, is disposed to support the views of the legal authorities. Of what value, then, can be the evidence of men which is, or appears to be, obligatory? In general, experts follow the lead of the advocate in excusing or accusing the prisoner. This cannot continue; it is contrary to justice, to the dignity of medicine, and of the magistrate. The professor proposes, first, that in every province a body of experts should be instituted, who had made legal medicine their special study, and had undergone a corresponding examination, from whom, when there was any necessity, a selection should be made. Secondly, that the distinction between experts for the accusation and defence should be abolished; that they should be selected by the advocate and the Attorney-General conjointly, and the number required should be drawn by lot.

Now, if in the above extract we substitute for "prisoner at the bar" and "Attorney-General," the words, "plaintiff" and "defendant," does not Professor Tommassi's reasoning apply to trials where the evidence of experts is taken in our own country?

When a trial is going to take place in which the soundness or sickness of a horse is involved, each side gets what professional evidence it can to support it. If any professional man is consulted, and his views do not agree with the side asking his opinion, the counsel takes good care not to call him, and *vice versâ*—in fact the solicitor takes care only to bring forward those who support his own case, and so the affair becomes a mockery of justice. This, of course, according to the present state of the law may only be considered right and proper; but to me it appears wrong that the law should allow it. Why should not experts be selected, whenever practicable, by the court, and especially so where the merits of the case are only matters of opinion? Of course, matters of fact can only be proved by those who have seen them; but advocates should certainly not be permitted to cast about for such professional evidence as supports their view of the case. If this be done, juries totally ignorant of medicine and surgery, and therefore quite incapable of

forming, except at hazard, a correct opinion, are influenced by a number of well-known names, and will sometimes give a verdict opposed to reason and common sense. I would therefore suggest that experts who give evidence on matters of custom, practice, and opinion should be selected by the court, and that they should not be chosen simply by advocates because they take the side of their clients.

If veterinary surgeons are subject to great pecuniary responsibility in the examination of horses, they must protect themselves. It is said to be impossible to do so by the wording of certificates; which opinion, however, is very much open to doubt. But granted its correctness, might not some form of printed agreement be kept by veterinary surgeons, to be signed by the person employing them before the examination of a horse, and saying that the opinion as to soundness is only given for what it is intrinsically worth, and that the veterinary surgeon will not be held answerable for mistakes. Also that he has only undertaken the examination on these terms. To sign this would only take a few seconds. Some veterinary surgeons, however, say that employers would not get horses examined on these conditions. My reply to this is that they have thus far done so, for they have not been hitherto aware that they had any redress even for a fraudulent, let alone a mistaken opinion. If it be said that any paper requiring signature would destroy confidence, I answer that I do not think it would if the practice were general. If it be said that purchasers often send horses by servants to be examined without any letter, or send instructions by telegraph, the obvious answer is that if veterinary surgeons find themselves "let in" to pay the value of two or three expensive horses, they will soon consider a little protective trouble as indispensable.

Unless veterinary surgeons are protected by some means or other, may not unscrupulous persons try to lay traps for them if they find that lucrative damages can be obtained by a successful action? Such actions could be ruinously used to serve private malice, and for purposes of extortion, and young practitioners, with not much money for law charges, might be crushed by them. In this matter it is the leading men of the profession who must take the initiative should active defence become necessary; and it is hoped that in such an event they will not be deterred, by a fear of having it said that they cannot have proper confidence in their own opinion and skill, from doing their duty. Sooner or later, if these actions at law are successful, medical men and veterinary surgeons will be obliged to find out means to protect themselves.

Even in the case of injuries in shoeing, veterinary surgeons have been much imposed upon; and it is said with much justice that only the apathy of the profession has prevented it from long ago emancipating itself from paying large damages for what, in many cases, is an unavoidable accident. Here again, however, the "box and clock argument" has been in most cases unhesitatingly accepted by both public and juries, and thus a very great injustice has been done to veterinary surgeons.

In writing here what I have done, I beg to disclaim any idea of becoming the defender of ignorance, either professionally or generally; my views are quite the opposite. We must, however, take care that in our efforts to raise the profession we do not burden it with charges that may crush it. In the examination of horses we cannot be too strict or conscientious, and anything fraudulent therein cannot be too severely reprobated. What I wish to guard against is any pecuniary punishment for mistakes which are sure to occur so long as human knowledge and skill are not infallible. The best guarantee of the professional man is his reputation, and the client who employs an adviser with a bad one has only himself to blame. As an almost universal rule, it may be said that veterinary surgeons are very con-

scientious in examinations for soundness; therefore it behoves all who have the good of the profession at heart to be exceedingly severe with any offender in this respect.

The Defence Fund is worthy of all support, but if veterinary surgeons are true—and only as allies of justice is it desirable that they should be true—to each other, we should not find the profession the victim of *civil war;* for such it really is when we see an array of witnesses with opposite opinions, where it seems extraordinary that there should be any cause for dispute.

Your faithful servant,

November 10*th*, 1879. JAMES LAMBERT, F.R.C.V.S.
Veterinary Surgeon, 17*th Lancers.*

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—Your paper on "The Responsibilities of the Veterinary Surgeon" has given me more satisfaction than anything I have read for many a day. In offering my sincere thanks for your manly utterance, and my approval of the high ground you take in discussing the subject, permit me to add a word on one or two points in your essay.

It has not unfrequently been remarked to me that any veterinary surgeon or professor can be induced to swear according to instructions, provided a sufficient consideration be offered. I felt annoyed at this, because it is only too true of too many of my profession.

The three causes to which you trace this unfortunate state of things, each contributes, but is not, to my mind, sufficient to account for the anomaly. A veterinary surgeon may have a fair scientific knowledge, a budget of ethical laws, feel no jealousy or desire for notoriety, and yet fall into the errors which you deprecate. Why? Because there is not a spark of honour in his soul to which you may appeal. How seldom a veterinary surgeon can be called a gentleman in ordinary behaviour; and I am not sure that this is altogether a matter for surprise. We must not forget that many members of the profession are taken from the lower ranks of society, and have not, therefore, enjoyed the advantages of culture during early life. Add to this the baneful influence of being brought into daily contact with grooms, carters, cowmen, horse-dealers, etc., etc., and need we wonder at the almost entire absence of the moral sense? How few open their minds to the refining agency of literature or art. Very few of us enjoy the luxury of good society. When you meet a veterinary surgeon, what does his conversation consist of? The size of his practice; the number of patients he sees in one day; the kind and number of horses he drives, etc., etc.

We must not lose sight of the withering effect of the inordinate love of money. Any man who estimates a fortune more highly than an honourable reputation has already taken one false step in the race, and it would be idle to expect reliable evidence from him in the witness-box.

That we are liable in cases of *malpraxis* is only too well known by those of us who attend valuable patients. Ever since the Paradise affair, I, for my part, have been very careful in pronouncing judgment in difficult cases, and when possible secure a consultation with a neighbour. This, however, must be conducted with care, for not many years ago I lost a client (for a time) through confiding in the honourable feeling of a brother veterinary surgeon.

I wish every member of our profession could be persuaded to read and digest your admirable paper, and what is more important still, translate it into daily practice.

Yours truly,

Newbury, Berks, *November 6th*, 1879. J. FRASER, M.R.C.V.S.

COMMENTS.

In the Editorial for September we called attention to a sad case of Hydrophobia occurring in Dublin, the victim, the daughter of a physician in the Irish capital, having been bitten in the lip by a pet dog, which had just returned from a rabiferous excursion so characteristic of the malady. We pointed out the great danger that was to be apprehended from the perambulation of this rabid animal, and warned the authorities to take steps to prevent the spread of the horrid malady. The warning appears to have been in vain, and our predictions are amply verified; for we now read of mad dogs running through the streets of Dublin, inoculating every creature they meet. For instance, we find the following notice in the *Freeman's Journal* for October 20th:

"On Saturday, about twelve o'clock, a good deal of excitement was caused in Moore Street by the fury of a mad dog. The dog was a small cur, and had a short rope round his neck, from which it would seem that he had been tied up and had made his escape. He was pursued by a crowd of people, who, however, made way for him in all directions when he made a rush on them. He first bit a child on the arm; he then rushed at a boy that was passing, seized him by the leg, leaving the mark of his teeth, and took a large piece out of his trousers in his bite. He attempted to bite the boy again in the side, and then jumped at his face, but did not succeed in biting him. A drayman then appeared on the scene, and with great courage seized the rope tied to the animal and jumped on his neck, and with the help of the crowd destroyed him, but not before the drayman had been bitten in the hand, leaving in it the mark of his teeth. The boy, child, and drayman were accompanied by constable 185 C to Jervis Street Hospital, and had the wounds cauterised and dressed."

As usual, we find "Cures" in profusion sent to the newspapers, all of which are worth less than the printer's ink that makes them public. Why, in the name of terrified and suffering humanity, and we might add, animality, cannot the Government adopt common-sense and effective measures, instead of leaving everything to chance or Providence? As a specimen of the multitude of preventive compounds which are said to be effective, the following is reprinted from the above named-newspaper.

"REMEDY FOR PREVENTING HYDROPHOBIA."

"One ounce Barbadoes tar,
One ounce of filings of pewter,
One ounce dried garlic, and
A small handful of rue—

say about as much as one could grasp between the points of the thumb and forefinger boil slowly in a quart of water until reduced to a pint, keeping the vessel closely covered during the process.

"Take a wine-glass every morning for three mornings, and at the next change of the moon take a fourth wine-glassful. Use within eight days after being bitten."

It is to be feared that in our dealings with this grave malady we are almost as confirmed fatalists as the followers of Mahomet. "No one who has lived in Turkey," says the *Daily Telegraph* of November 15th, "can fail to have been perplexed by the circumstance that Hydrophobia seems but seldom to affect the dogs of Islam, although millions of masterless curs infest the streets of Moslem towns and villages. It appears, however, that an unusually long and hot summer season, attended by drought, resulted some weeks ago in an outbreak of Hydrophobia among the canine scavengers of Samsun on the Black Sea coast. At first small notice of the calamities caused by the afflicted dogs was taken by the local authorities; but by-and-bye, as rabid Samsunites became daily more and more common in the town, a deputation of citizens waited upon the Vali to implore that some steps might be taken to save the rest of the inhabitants from the horrors of Hydrophobia. His Excellency replied that 'he would think about it,' and a few days later promulgated a decree, of which the following is a literal translation: 'In consideration that the dogs of Samsun are entrusted with the cleansing of our town, in virtue of which function they enjoy certain civic rights which cannot be contested by any sane person, the Governor deems it obligatory upon him, ere he proceed to stringent measures condemned by his conscience, to

submit this matter and the grave facts connected with it to the superior religious authorities in Stamboul.' This decree was tardily followed by a *fetwah* from the Sheik-ul-Islám, sentencing the dogs to life-long exile from the town. Next day the offending scavengers were collected, bound, and conveyed under a strong escort to a *tcharchembe* some miles distant from Samsun. Delivered from their persecutors, the Samsunites breathed more freely; but not for long! A day or two later the banished dogs began to put in an appearance, by twos and threes at a time, in their old familiar quarters; whereupon pious men exclaimed, 'See the finger of Allah, who protects oppressed innocence!' and the persons subsequently bitten were comfortably regarded by the orthodox Vali as "phantasts and visionaries.'"

ANSWERS TO CORRESPONDENTS.

V.S.—A member of the Royal College can present himself for the Fellowship Degree if he has been in practice (either on his own account or as assistant) for five years. The regulations and subjects for examination you will find on page 45 of the register, etc., of the College. Through the powers conferred by the supplemental charter, the name of a veterinary surgeon can be removed from the register for misconduct. No name has yet been removed, and the question as to the nature of the offence which would necessitate such a serious punishment, would have to be decided by the Council in each particular case.

AMATEUR.—The person to whom you applied about your dog's disease is a quack. Take the animal to a veterinary surgeon. There are several in London who make canine disorders a special study.

COMMUNICATIONS from Messrs. Nunn, Oliphant, Steel, Poyser, Hedley, Frank Smith, McGavin, Santy, Furnivall, Jones, and others, as well as the Reports of the Central and Yorkshire Societies are unavoidably held over until next month.

Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from R. B. Prentice, Longford; Professor Walley, Edinburgh; "Cyclop"; A. L. Butters, Sunderland; A. E. Queripel, Royal Artillery, Punjab; R. Poyser, The Carabiniers, India; H. M. Chichester, Charlton; J. Wilson, Nantwich; W. Runciman, Market Deeping; Professor McCall, Glasgow; J. H. Steel, London; R. Ward, London; "B.A."; "V.S."; J. Webb, Bishop's Stortford; J. Lambert, 17th Lancers; A. H. Santy, Norwich; "Virtute et Labore"; J. Fraser, Newbury; F. Smith, Royal Artillery, Woolwich; J. Storrar, Chester; "An Old Cockney"; W. Shipley, Great Yarmouth; Dr. Thin, London; A. E. Macgillivray, Banff; J. Rowe, London; S. Locke, Manchester; C. Steel, 16th Lancers, Brighton; J. A. Nunn, Royal Artillery, Jellalabad Field-Force, Afghanistan; J. McGavin, Montgomery; J. Colam, London; W. Furnivall, Kingston-on-Thames; "Vetula Avis;" M. Hedley, Dublin; W. H. Coates, London; A. Jones, Queen's Bays, Dublin.

BOOKS AND PAMPHLETS: *W. Lauder Lindsay, M.D.*, Mind in the Lower Animals in Health and Disease; *Sir Thomas Watson, Bart., M.D.*, The Abolition of Zymotic Diseases; *A. Zundel*, La Dépécoration; Bulletin de la Soc. Centrale de Méd. Vétérinaire; *P. Rivolta*, Studi fatti nel gabinetto d'Anatomia Pathologica della R. Scoula Superiore Veterinaria di Pisa; *J. Vaughan*, Strangeway's Veterinary Anatomy; *A. McNeill, M.D.*, A Treatise on Hydrophobia.

JOURNALS, ETC.: *Recueil de Méd. Vétérinaire; Repertorium der Thierheilkunde; Gardener's Magazine; Medical Press; Journal of Royal Geographical Society; Journal of National Agricultural Society of Victoria; Annales de Méd. Vétérinaire de Bruxells; Der Thierarzt; Wochenschrift für Thierheilkunde und Viehzucht; Archives Vétérinaire; L'Echo Vétérinaire; Journal de Méd. Vétérinaire; Dublin Journal of Medical Science; Lancet; Nature; Archiv für Thierheilkunde; Animal World; British Medical Journal; American Veterinary Review.*

NEWSPAPERS: *Freeman's Journal; Marylebone Mercury; Scotsman; Montreal Daily Witness; Edinburgh Courant; Paddington Times; Colman's Rural World; American Traveller; Glasgow Herald; Irish Times; Scotsman.*

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